

THE
AMERICAN JOURNAL OF PHARMACY.

NOVEMBER, 1864.

MINUTES OF THE TWELFTH ANNUAL MEETING OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION, 1864.

The twelfth annual meeting of the American Pharmaceutical Association commenced its proceedings at the Hall of the Catholic Institute of Cincinnati, Cincinnati, on Wednesday, September 21st, 1864, at 3 o'clock P. M.

The President, Mr. J. Faris Moore, of Baltimore, Md., in the chair; H. N. Rittenhouse, of Philadelphia, acting as Secretary.

The Chair appointed a Committee on Credentials, composed of Messrs. Evan T. Ellis, of Philadelphia, H. W. Lincoln, of Boston, and A. P. Sharp, of Baltimore, who, upon examination, reported the following gentlemen as Delegates duly appointed to attend the present meeting:

From the Massachusetts College of Pharmacy.—Messrs. H. W. Lincoln, R. R. Kent, Charles A. Tufts, A. P. Meizar, Thomas Hollis.

From the Philadelphia College of Pharmacy.—Messrs. E. Parrish, Evan T. Ellis, Wm. Procter, Jr., Alfred B. Taylor, John M. Maisch.

From the Baltimore College of Pharmacy.—Messrs. J. B. Baxley, A. P. Sharp, J. Faris Moore, Wm. Caspari, H. A. Elliot.

From the Cincinnati College of Pharmacy.—Messrs. P. Reinlein, L. Groneweg, A. W. Furtmyer, O. Heineman, C. H. Bode.

The following gentlemen were reported as having been elected members since the last meeting, by the Executive Committee.

Thomas Jefferson Covell, Springfield, Ill.	R. C. Lineaweaver, Washington, D. C.
Wm. Kent, Fort Dodge, Webster County, Iowa.	Francis P. Green, Bellefonte, Pa.
Joseph L. Parker, Fort Dodge, Webster County, Iowa.	F. T. Maynard, California.
	Hubert Primm, Carondolet, Mo.

The Committee presented the following names for membership:

Clayton N. Wills, Philadelphia, Pa.	I. L. A. Greve, Cincinnati, O.
Chas. F. Gristock, "	Samuel B. Allen, "
Samuel Campbell, "	A. Wagner, "
George H. Ashton, "	H. F. Reum, "
Theodore St. Clair, "	A. Rutenick, "
William Ellis, "	E. Berghousen, "
Edward H. Buehler, "	A. Fenner, "
Henry B. Morris, "	Ernst Kampfmueller, "
Geo. Edward Jeannot, "	Chas. Kampfmueller, "
Edward C. Jones, "	James W. Nadand, "
Wm. C. Bakes, "	Uriah F. Shalter, "
S. Mason McCollin, "	E. Kunckel, "
John H. Winklemann, Baltimore, Md.	George Merrell, "
Joseph Y. Skinner, Baltimore, Md.	Henry Gers, "
Thomas A. McConville, Worcester, Mass.	C. H. Bode, "
Erastus N. Champlin, Saratoga Springs, N. Y.	O. Heineman, "
Geo. H. Fickhardt, Circleville, O.	Wm. Karrmann, "
Eugene Alex. Houston, Yonkers, N. Y.	E. W. Crowther, "
Alfred J. Rankin, Pittsburgh, Pa.	T. D. Wells, "
Simeon Johnston, "	H. H. Hill, "
Dr. F. Mahla, Chicago, Ill.	A. M. Johnston, "
E. H. Sargent, "	James Markward, "
Albert E. Ebert, "	Wm. Tilley, "
James M. Mill, "	A. Salpins, "
— Bartlett, "	A. Langenbeck, "
David Coggins, Lowell, Mass.	L. Witzell, "
L. Groneweg, Cincinnati, O.	W. J. Fritsch, "
A. W. Foertmyer, "	W. E. Reifsneider, "
John Keeshan, "	John M. K. Walker, "
G. A. Hiller, "	Hiram Maguire, "
F. A. Crowther, "	W. H. Durkee, "
Alfred C. Hill, "	R. B. Oxley, "
	Matthew Yoston, "
	Michael Parr, "
	S. L. Hayden, "
	J. G. Fratz, "

A. Hottendorf, Cincinnati, O.	Otto Lippert, Cincinnati, O.
George Eger, " "	H. M. Merrill, " "
S. B. Tomlinson, " "	Charles Foertmyer, " "
W. H. Klayer, " "	Wm. Snyder, " "
Jos. H. Debolt, " "	George W. Wilcox, Columbia,
Griffith Rees, " "	Hamilton County, Ohio.
C. M. Helman, " "	L. P. Stone, Newport, Ky.

A ballot being ordered, Messrs. A. J. Tully, of Cincinnati, and G. F. H. Markoe, of Boston, were appointed tellers, who reported the unanimous election of all the above-named candidates.

The roll being now called, the following members answered to their names:

A. S. Lane, Rochester, N. Y.	E. C. Jones, " "
G. F. H. Markoe, Boston, Mass.	A. P. Sharp, Baltimore, Md.
H. N. Rittenhouse, Phila., Pa.	P. Reinlein, Cincinnati, O.
Wm. B. Chapman, Cincinnati, O.	L. Groneweg, " "
A. J. Tully, " "	A. W. Foertmyer, " "
Wm. S. Merrell, " "	O. Heineman, " "
W. J. M. Gordon, " "	C. H. Bode, " "
Robert R. Kent, Boston, Mass.	Albert E. Ebert, Chicago, Ill.
H. W. Lincoln, " "	Edward Berghausen, Cincinnati, O.
Evan T. Ellis, Philadelphia, Pa.	H. F. Reum, " "
J. F. Moore, Baltimore, Md.	C. H. Foertmyer, " "
W. H. Adderly, Cincinnati, O.	G. H. Fickhardt, Circleville, O.
A. B. Taylor, Philadelphia, Pa.	

Mr. A. B. Taylor, Chairman of the Executive Committee, having read the report of said Committee, it was adopted.

REPORT OF THE EXECUTIVE COMMITTEE.

In accordance with the requirements of the Constitution, the Executive Committee presents the following Report of its action for the past year.

The volume of Proceedings of the Association, for 1863, was issued as early after the meeting in Baltimore as the proper revision and correction of the work, in the course of publication, and the private engagements of the Committee, would permit.

One thousand copies of the work were published; and, although the price of material and labor had very considerably advanced, it was thought best to use good paper for the volume, rather than to reduce the cost by using paper of inferior quality. The book was published in good style, and at a cost of \$866 33, as will be seen by the following detailed statement of expenses:

Bill for composition and press work, (322 pages.)	\$346 08
" paper, (23 reams, @ \$11.)	253 00
" binding, (1,000 copies,)	220 00
" engraving and printing wood-cuts,	38 00
" incidental expenses,	9 25
	\$866 33

While the expenses attending its distribution were as follows :

Bill for boxes and freight, L. A. & Co., Boston	\$11 05
" postage, Boston to New York	28 40
" incidental expenses,	2 57
Total expense of volume, \$908 35	

These expenses have been paid by the Treasurer, leaving a balance in his hands, as will be seen by his Report. The Proceedings were distributed as usual, either by mail, or through a few members residing in the large cities. Any member entitled to a copy of the Proceedings, for 1863, who has been neglected in the distribution, will be supplied by sending his address to the Chairman of this Committee, Alfred B. Taylor, 1015 Chestnut Street, Philadelphia, and notifying him of the fact.

The stock of Proceedings stored in the Philadelphia College of Pharmacy is as follows :

For 1852,	234 copies, unbound.
" 1854,	49 "
" 1855,	None,
" 1856,	32 "
" 1857,	292 "
" "	35 " bound.
" 1858,	293 " unbound.
" " any 1858	46 " bound.
" 1859,	90 "
" 1860,	225 "
" 1862,	350 "
" 1863,	254 " "

This stock is exclusive of eighty volumes of various years, brought by the Executive Committee to Cincinnati. In addition to these volumes there are, no doubt, others remaining in the hands of parties in various sections of the country, to whom they have been sent for sale or distribution. It would, perhaps, be advisable for the Association to pass a resolution requesting all such copies, and all copies that may hereafter be sent for distribution, and remaining on hand at the time of our annual meeting, to be sent to the Chairman of the Executive Committee for the succeeding year, to be deposited by him along with the remainder of the stock. In view of the value of this gradually accumulating stock, it is suggested that it would be prudent to have it insured, and we recom-

mend that the next Executive Committee be authorized to have such insurance affected.

Copies of the Proceedings were distributed to the leading public Libraries, and about fifty copies to foreign Societies, Libraries and individuals, through the Smithsonian Institute.

As has been seen above, a considerable number of volumes of this and of previous years remain on hand, and your Committee would suggest the propriety of members completing their sets of volumes as far as practicable. A large amount of money might thus be raised, and perhaps enough to publish the volumes which are now out of print. In consequence of the very great advance in prices, both of labor and material, your Committee is of opinion that, unless a corresponding advance be made in the revenue of the Association, it will be impossible to continue the publication of the Proceedings. It is hoped that means will be devised whereby this important end may be attained. We would suggest that the annual contribution of members be advanced to three dollars, and that the price of the Proceedings be raised to one dollar and a half per copy. We would also recommend that life members be charged with all copies of Proceedings they may hereafter receive.

Since our last meeting seven members have been elected by the Executive Committee; their names have been reported. The subject of prizes having engaged the attention of the Association for several years, and no practical plan having been adopted, the following suggestions are submitted for the consideration of the members.

It is proposed that two prizes be offered for Essays presented to the Association, to be awarded at the meeting subsequent to the one when such Essays are presented. The chief difficulty heretofore in offering prizes has been the want of funds, and to obviate this the following plan is suggested:

The prizes, and the persons to whom they shall be given, shall be decided by vote, any person being allowed to give as many votes as he pleases, for any candidate he may select, on the payment of 25 cents for each vote; the candidate receiving the highest number of votes to retain the first prize, not to exceed \$50; and the candidate receiving the next highest vote to receive the second prize, not to exceed \$25.

It is also proposed that a prize, not to exceed \$25, be given to the person presenting to the Committee on Queries the best "Three Queries for investigation at a subsequent meeting of the Association." The merits of the Queries proposed to be decided upon by the aforesaid Committee.

Should the amount subscribed be insufficient to pay the above prizes, then the amount subscribed to be divided pro rata; that is, one-half for the first prize and one-fourth for each of the others.

In addition to the above, it is suggested that the Association have pre-

pared the dies for an appropriate medal, and that medals be struck therefrom in gold, silver and bronze, one of each description to be awarded annually, to three persons respectively most deserving for general service and usefulness to the Association. The medals to be distributed by ballot of the members, on the last day of each Annual Meeting of the Association.

We would recommend that the Committees on Scientific Queries, on the Drug Market, and on Business, be made Standing Committees, since they are equally permanent and important with those now called Standing Committees. These Committees have grown into importance with the growth of the Association, (and no doubt the list will be hereafter further extended), and upon their action in a very large degree depends the interest and success of the Association.

This would involve a slight change in Article IV. of the Constitution, which now provides for the election of only two Standing Committees. Sections should be added, explaining and defining the duties of these Committees.

Before closing this report, the Committee is reminded of a sad duty it is called upon to perform. It is that of recording the names of members deceased since our last meeting.

During the past year, several of our associates have been taken from our midst: of such, the following names have been reported to the Committee:

Franklin Bache, Philadelphia, Pa.

John Meakim, New York, N. Y.

George W. Weyman, Pittsburgh, Pa.

[As the death of all these Members has been noticed in this Journal except G. W. Weyman, we omit that part of the report relating to them.]

GEORGE W. WEYMAN was born in Pittsburgh, Pa., March 22d, 1832. He was placed in the Western University of Pennsylvania, at Pittsburgh, where his early education was sufficiently advanced, and from there went to Yale College in 1849, where he pursued his studies in the Chemical School until September, 1852. Early in the following year he went to Germany, and became a student in the Laboratories of Munich and Gottingen, taking the degree of Ph. D. On his return to the United States in 1856, he spent a short time with Prof. Silliman at Yale, and then repaired to his native city, to put into practice the store of useful knowledge he had acquired under such favorable circumstances. He opened a laboratory and Pharmaceutical store combined, in which he prosecuted the business successfully, until his life was terminated by severe and rapid illness on the 16th of June, 1864. Dr. Weyman was much esteemed by the Members of this Association, which he joined in 1858, and of which, at the time of his death, he was one of the Vice Presidents. Cut off at 32 years of age, in the prime of his early manhood, his loss is deeply de-

plored by his associates and friends in the Association, and we tender to his relatives our sincere condolence.

In addition to the above list, the Committee has considered it a duty to record the death of one who, though not a member of this Association, was a careful observer of its progress, and felt a lively interest in its Proceedings, viz., Prof. R. P. Thomas, of Philadelphia.

The business next in order was to nominate officers for the ensuing year, but Delegates from some of the Colleges, who were known to be on the way, not having arrived, it was thought best to appoint a Committee, and leave the absent delegations to name candidates, when they arrive. The following gentlemen were appointed, accordingly, a Nominating Committee, agreeably to the Constitution.

H. W. Lincoln, Boston.
Wm. Procter, Jr., Philadelphia.
A. P. Sharp, Baltimore.

P. Reinlein, Cincinnati.
E. L. Massot, St. Louis.

To which were added by the President :

E. Parrish, Philadelphia
A. E. Ebert, Chicago.

Dr. E. R. Squibb, Brooklyn.

On motion of Evan T. Ellis, the Medical Profession were invited to be present at the meetings of the Association. Adopted.

The President then read his Annual Report.

ANNUAL REPORT OF THE PRESIDENT.

Gentlemen of the American Pharmaceutical Association :

The period has once more arrived which calls us together as an association of Pharmacists, for the advancement of the art and science of Pharmacy, and our own mutual improvement; and it becomes my pleasure, as well as my duty in compliance with a constitutional requirement, to address my associates.

The condition of our country, which has so distracted the public mind, and directed it from the pursuit of peaceful avocations and scientific research for the past three years, still continues; and the hope so fully indulged by all at our last meeting, that peace and unity would once more bless our country ere we were again assembled, has been disappointed. It is, however, with sincere gratitude to Him, who rules in war as well as in peace, that I congratulate you that you are enabled to meet in this beautiful city again to renew our associations, and pursue the useful and beneficial objects of our Convention.

The continuance of war materially affects the usefulness as well as the prosperity of the Association, by calling many of our best and ablest associates into other pursuits, and cutting us off from many of our brethren,

who in former times met with and gave us their aid. Yet let us hope that before we again assemble, the blessings of peace may once more visit our land, and we may be permitted to meet with friends long separated from us, and enjoy all the benefits of association so long denied us. It is cause for congratulation that so many of our number are spared to lives of usefulness; yet in the providence of God we are called upon to mourn the absence of some bright names, whose presence we have enjoyed, and whose words we have listened to with pleasure for the last time, among which is that of the lamented Meakim. His absence leaves a void which time will scarcely fill. Yet it is with satisfaction that we can say, he has performed his part faithfully, whilst amongst us,—has finished his work, and passed to his reward in another world. I regret that my numerous engagements, apart from my regular occupation, have precluded the possibility of my communicating with the various Standing Committees, but from the known zeal and ability of the gentlemen composing the Committees, together with their Chairmen, I feel assured we will have able and interesting reports from all.

The report of the Treasurer on the financial condition of the Association for the past year, is highly gratifying: notwithstanding the increased expenses attending the publication of the Proceedings and other incidental expenses, the funds have been sufficient for all expenditures, and leaves a large balance for the coming year.

The Treasurer in his report calls your attention to several subjects of importance, to which I would solicit your earnest attention. On examination of his books, it will be found that there are many enrolled as members, who have failed to pay their dues for a number of years. Some, indeed, who have not paid their first subscription, and several are now tendering their resignations.

I think the Association should take some action with regard to such cases, and would suggest that the Executive Committee be instructed to withhold the Proceedings from all members in arrears for more than three years. It is also desirable that the Treasurer should have some instructions as to the disposition he is to make of those tendering resignations whilst in arrears. Accompanying the report are several communications, which the Treasurer is desirous to lay before the meeting, that he may receive instructions as to the disposition to be made of them. In view of these circumstances, I would suggest that the whole subject be referred to the Executive Committee, or to an especial Committee appointed for that purpose to report at our next annual meeting.

I would again call the attention of the Association to the fact that the time is fast approaching when many of our members will, in compliance with the Constitution, cease to be Contributive Members. Some, indeed, are already entitled to Life Membership, and in view of the fact that the income will not more than meet necessary expenditure, it becomes a serious question whether we will be justified in depending solely upon new

members for support. I would recommend the suggestion of our former President, Prof. Procter, that the Annual Subscription be reduced to one dollar after ten years' Membership.

I would call attention to the fact that the names of many Members are omitted from the list published in the last Proceedings, and would suggest a careful revision in the forthcoming volume.

In closing, permit me to call your attention to a subject which, although not within the direct sphere of our duties as an Association, is, I conceive, of vital importance to us as a profession.

This Association, in connection with the various Colleges, has already done much to raise the standard of our profession from mere dispensing apothecaries to their true position among kindred professions, and we already see a great advance in the character and attainments of the pharmacists. But the subject to which I would call the earnest attention of this Association, and through it the profession generally, is with regard to the requisite preliminary acquirements of those entering upon the study of Pharmacy.

We often find young men who, though apt at their manipulations, and possessing, perhaps, more than ordinary talents in other respects, most wofully deficient in their general education; and this is in many cases a drawback of no small importance to themselves, the profession and the community at large.

I should think means could be easily derived by which the standard of necessary education might be raised to such a height, as would be both beneficial and acceptable to all, and especially contributory to the dignity of the profession.

Pharmacy is, in the highest and most exalted acceptation of the word, a science. In that one word, whose real import and significance but few comprehend, are embraced a host of collateral branches of knowledge, the attainment of which are indispensable to him whose ambition aspires to the title of Pharmacist in its proper sense.

With the high appreciation of the honor conferred upon me, grateful for the kindness and indulgence extended toward me as President of this Association, and with the hope that in the providence of God we may all be enabled to meet again at our next annual meeting, I transfer to my successor a position which I sincerely hope he may be more capable of filling than myself.

J. FARIS MOORE, President.

It being impossible to proceed in business, on account of the absent delegations, it was moved and seconded that we adjourn, to meet to-morrow morning at 9 o'clock.

The meeting then adjourned.

Second Session—Thursday Morning.

The Association met at 10½ o'clock A. M., the President in the Chair.

The Minutes of the previous meeting being read by the Secretary, on motion, were adopted.

The Roll being now called, the following members, additional to those of yesterday, answered to their names:

H. T. Kiersted, New York.	Theo. Kalbe, St. Louis.
P. W. Bedford, " "	Edwin R. Smith, Monmouth, Ill.
John M. Maisch, Philadelphia.	Eugene L. Massot, St. Louis.
R. H. Stabler, Alexandria, Va.	Hubert Primm, " "
H. Haviland, New York.	E. R. Squibb, Brooklyn.
F. T. Whitney, Mass.	E. Parrish, Philadelphia.
G. Burrington.	E. S. Wayne, Cincinnati.
W. Procter, Jr., Philadelphia.	Enno Sander, St. Louis.
Geo. C. Close, Brooklyn.	W. E. Reifsneider, Cincinnati.
Fred. Stearns, Detroit.	Wm. Nadand, " "
E. W. Sackrider, Cleveland.	A. M. Johnson, " "

The Committee on Credentials reported Messrs. Theo. Kalbe, Hubert Primm, Enno Sander, E. L. Massot, James McBride, as Delegates from the St. Louis Pharmaceutical Association: also, Messrs. H. T. Keirsted, G. C. Close, J. W. Shedden, F. F. Mayer, P. W. Bedford, as Delegates from the College of Pharmacy of New York.

The Executive Committee presented the following names for membership; a ballot being ordered, Messrs. G. F. H. Markoe, of Boston, and Edward C. Jones, of Philadelphia, acted as tellers, who reported them as duly elected:

A. Samson, Richmond, Ind.	Alfred Mellor, Philadelphia.
D. B. Miller, Covington, Ky.	Spencer O. Hatfield, Brooklyn
H. R. Miller, "	N. Y.
John T. Hanning, "	Gilbert Long, Brooklyn, N. Y.
George J. McKay, Mount Vernon, Westchester County, N. Y.	Sylvester M. Carle, "
Wm. S. Shuey, Springfield, O.	Joseph Abel, Pittsburg, Pa.
W. H. Crawford, St. Louis, Mo.	Geo. A. Kelley, Allegheny, Pa.

The Committee on Nominations being ready to report, named the following gentlemen for Officers and Standing Committees for the ensuing year:

*For President.**

W. J. M. GORDON, Cincinnati, Ohio
FRED. STEARNS, Detroit.
E. L. MASSOT, St. Louis.

For Vice-Presidents.

First, RICHARD H. STABLER, Alexandria, Va.
Second, ENNO SANDER, St. Louis.
Third, THOMAS HOLLIS, Boston.

Treasurer.

J. B. BAXLEY, Baltimore.

Recording Secretary.

H. N. RITTENHOUSE, Philadelphia.

Corresponding Secretary.

P. W. BEDFORD, New York.

Executive Committee.

JOHN M. MAISCH, *Chairman*, Philadelphia.

WM. WRIGHT, JR., New York.

W. H. ADDERLY, Cincinnati, O.

H. A. ELLIOTT, Baltimore.

H. N. RITTENHOUSE, *Rec. Sec. Ex-Off.*

Committee on Progress of Pharmacy.

ALFRED B. TAYLOR, *Chairman*, Philadelphia.

C. H. BODE, Cincinnati.

EDWIN R. SMITH, Monmouth, Ill.

E. H. SARGENT, Chicago, Ill.

P. W. BEDFORD, *Cor. Sec. Ex-Off.*, New York.

Mr. Taylor declining to serve as Chairman, this Committee, on motion of Mr. Haviland, was referred back to the Nominating Committee, to report at the afternoon session.

A ballot being had for President, the tellers announced W. J. M. Gordon as having received four-fifths of the votes; when, on motion, the election of Mr. Gordon was declared unanimous.

* The reason why three names were presented for President, was to do away with the precedent of electing a President from the city in which the Association met, as it might so happen that such a course would be inexpedient; and, besides, would always exclude worthy members from being candidates, from towns where the Association would not be likely to assemble.

The chair being now vacated by the retiring President, Mr. Gordon took his place with some very appropriate remarks.

On motion, the President was authorized to cast the ballot for the remaining Officers and Committees, upon which the tellers reported their election.

The Business Committee offered the following Resolutions, as Amendments to the Constitution, to come up at the next meeting of the Association for final adoption.

Notice to amend the Constitution.

Resolved, That Article III., Section I. of the Constitution be amended by inserting after the words "Who shall," the words "With the exception of the Recording Secretary." Section I. will then read as follows:

"Article III. Section 1st.—The officers shall be a President, two or more Vice-Presidents, a Recording Secretary, a Corresponding Secretary and a Treasurer, who shall, with the exception of the Recording Secretary, be elected annually, and shall hold office until an election of successors."

Resolved, That a new Section, to be called Section II., be introduced under Article III., as follows:—The Recording Secretary shall be elected to hold office permanently, during the pleasure of the Association; shall receive from the Treasurer an annual salary of one hundred dollars, and the amount of his actual travelling expenses to and from the place of annual meeting, in addition to his salary.

Resolved, That the present Section II. be called Section III., and the numbering of the remaining Sections of Article III. be corrected in accordance with these Amendments.

Resolved, That Section IV. be amended by substituting after the words "received by the Association," the words "and shall be charged with editing, publishing and distributing the Proceedings of the Association, under the direction of the Executive Committee," for the remainder of this Section. The Section will then read as follows:

"The Recording Secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays and papers of every description received by the Association, and shall be charged with editing, publishing and distributing the Proceedings of the Association, under the direction of the Executive Committee."

Resolved, That the subject of this Amendment be laid over for action at the early session of the next annual meeting of the Association, so that, if adopted, the Nominating Committee may act in accordance with the Amendment, in selecting a candidate for permanent Secretary.

The Treasurer's Report was now read by Mr. J. F. Moore, in the absence of the Treasurer, Mr. J. B. Baxley.

On motion, the Report was accepted.

TREASURER'S REPORT.

BALTIMORE, Sept., 15th, 1864.

To the Officers and Members of the American Pharmaceutical Association:—

It affords me pleasure to present the same healthful condition of the Treasury of the Association, as when I took charge of it one year since. Notwithstanding the increased expenditure incurred in publishing the Proceedings, yet the balance on hand is within forty-five dollars of what it was last year, and the Association free of debt.

I concur in the statement of the late Treasurer, viz: that our present financial prosperity "is owing to a large number of delinquent Members still coming forward and paying their arrears." There are many, however, as the accompanying letters will show, who repudiate their dues, and many more who do not deign to take any notice whatever of the frequent appeals of the Treasurer. This matter claims some action on the part of the Association. I have grave doubts, however, whether the proper time has yet arrived to agitate the subject. But in view of any action that may hereafter be taken, recommend that the Treasurer be instructed to make an alphabetical list of the entire Membership, and their standing with the Association, to be presented at the next Annual Meeting.

I am satisfied, from the frequent applications I receive for information on subjects that are recorded in the Constitution and By-Laws, that the Association should have that instrument printed in pamphlet form, and the Secretary be required in all cases to notify new Members of their election in writing, with a copy of the Constitution and By-Laws accompanying the notification. For the necessity of the above recommendation, I would refer to letter marked No. 11.

Several of the Members have called my attention to the fact of their names not appearing on the Roll of Membership, and one, that there is no evidence whatever of his election in any part of the printed Proceedings. Accompanying, I enclose a list of the names referred to above, marked No. 3. With many regrets that I am not able to meet the Association this year, I am very respectfully, &c.,

J. BROWN BAXLEY, *Treasurer.*

Gross receipts by Treasurer, \$1381.44. Gross payments, \$978.19. Balance in Treasury, \$403.25.

On motion, a Committee was appointed to audit the Treasurer's Report. The Chair appointed Messrs. F. Stearns, J. E. Moore and H. Haviland, said Committee.

On motion, the Report of the Executive Committee was again read by Mr. A. B. Taylor, its Chairman, with the addition of an obituary notice of the late John Meakim, of New York; the obituary was ordered to be incorporated in the Report, and the Report accepted.

Report of Committee on Progress of Pharmacy, in the absence of the Chairman, G. J. Scattergood, was presented by Mr. Procter, who read some extracts from it.

The Report was accepted, and ordered to be handed to the Executive Committee for publication.

Corresponding Secretary's Report was read by Mr. P. W. Bedford; the Secretary's Report was accepted and ordered to be published.

Second Session.

Report of Committee on Drug Market being next in order, was read by the Chairman, Mr. J. M. Maisch. On motion it was accepted and ordered to be published.

Report of Committee on Election of Members and Membership being in order, was read by Mr. E. Parrish. On motion it was accepted and ordered to be published.

On motion the meeting adjourned until 2½ o'clock this afternoon.

Adjourned.

Thursday afternoon—Third Session.

At 3 o'clock the President, W. J. M. Gordon, called the meeting to order.

The minutes of the morning session were read and accepted.

The Nominating Committee being ready to report presented the following as the Committee on Progress of Pharmacy:

J. F. MOORE, Chairman, Baltimore.

LEWIS DOHME, “

C. H. BODE, Cincinnati.

E. R. SMITH, Monmouth, Ill.

P. W. BEDFORD, Cor. Sec., Ex-Off., New York.

The President cast the ballot as directed and declared them duly elected.

The Committee, appointed to audit the Treasurer's accounts, made the following report:

“The Committee, appointed to audit the Treasurer's accounts, have performed the duty assigned them, comparing the payments with the vouchers and find them correct. They find, however, an error in the footings, of ten dollars, to the credit of the As-

sociation, making the balance in the hands of the Treasurer \$413.25."

F. Stearns,
J. F. Moore,
H. Haviland, } Committee.

Answers to the Scientific Queries, proposed at the last meeting, were now called for. They were read by Dr. Squibb, Chairman of the Business Committee, and the following answers elicited:

QUERY 1st.—Fermentation and cryptogamic vegetation viewed as destructive agents in connection with drugs and pharmaceutical preparations. What are the best means of avoiding the former, and arresting the growth of the latter without injury to the drugs and preparations?

Answered by G. J. Scattergood, by whom it was accepted, in a note to the Association, in which he states:

"In answer to Query No. 1, I desire to state that some attention has been paid to the subject, and experiments performed with a view of discovering the cause of fermentation in syrups, &c., and the means of preventing it, but from having been engaged in other service for the Association (unexpected at the time of accepting the Query), I have been unable to investigate the matter satisfactorily."

It was continued to him.

QUERY 2d.—Is there a practical process whereby Aloin may be easily extracted from commercial Aloes, so as to reduce the price of this principle in the market?

Not being replied to by Mr. P. W. Bedford, he made some remarks as to his investigation, which had not been satisfactory to himself, and it was referred to the Committee on Queries.

QUERY 3d.—Is there an eligible method, by means of which all the medicinal matter of Cinchona may be held in a permanent solution without deposition of cincho-tannates or cinchonic red?

Answered by Mr. A. B. Taylor; paper was referred to the Executive Committee. The preparation exhibited by Mr. Taylor was very handsome in appearance and elicited some discussion, the success being from the use of Glycerin as a solvent, in which its value in astringent extracts was looked upon as important.

QUERY 4th.—What is the best process for extracting lard so as to fit it for the purposes of pharmacy; and what the best means for preserving it for use during the summer and autumn?

Answered by Mr. H. W. Lincoln, of Boston.

Specimens being exhibited, the various processes used were discussed.

QUERY 5th.—What is the proportion of Camphor present in the official Aqua Camphoræ?

Answered by Mr. G. F. H. Markoe, of Boston.

This elicited considerable remark, in which the formula of the new British Pharmacopœia was alluded to.

QUERY 6th.—Does the Aqueous Extract prepared from Jalap, that has been previously exhausted by alcoholic process, have any medicinal properties, or does the alcoholic extract of Jalap fully represent its virtues?

Answered by Mr. A. B. Taylor, of Philadelphia.

QUERY 7th.—Does the volatile oil of Matico possess the power of stopping hemorrhage, or does that property of the drug reside in some other ingredient or in the physical structure of the leaf?

Answered by a note from Mr. Higgins, who was unable to procure proper materials to operate with.

QUERY 8th.—On the pharmacist as a merchant, and on commercial education in relation to the successful prosecution of the pharmaceutic art?

Answered by Mr. F. Stearns, of Detroit.

QUERY 9th.—Stramonium is abundant in the United States, and its alkaloid Daturia is alleged to be identical with Atropia in Belladonna. If this be true, in what relative proportions do these plants contain this principle, and why may not Stramonium be used as a source of Atropia?

No reply was received from Mr. F. F. Mayer, by whom it was accepted.

QUERY 10th.—It is now known that Storax is a production of Liquidambar Orientale, a tree closely resembling L. styraciflua of the United States. It is also well known that our indigenous Liquidambar yields in warm latitudes a balsamic exudation, analogous to storax in odor and to tolu in consistence; and contains cinnamic and benzoic acids. Query.—Will this tree yield a product identical, or nearly so, with commercial storax, if it is treated in the same manner?

Partially answered by Professor Procter, who asked to have it continued to him another year.

On motion of Mr. A. B. Taylor it is ordered, that in all cases, where Queries were not answered or heard from at the time of meeting, they be continued another year to the same person.

QUERY 11th.—Is Nicotina the active principle in carefully dried green tobacco leaves? Do the seeds of tobacco contain the same alkaloid? and if so, does the proportion of nicotine found in commercial (fermented) tobacco justify the belief of Liebig (Agricultural Chemistry, Amer. ed., 184), that nicotine is an artificial product?

Answered by Professor Mayer, whose paper was read by Mr. Bedford, of New York.

QUERY 12th.—What is the best arrangement for spreading plasters of uniform sizes, rapidly and well; and what is the best form and weight of spatula for spreading plasters extemporaneously? together with observations on the dispensing of this form of preparations.

Answered by Mr. W. C. Bakes, of Philadelphia, who exhibited through Mr. Parrish, proper machines for the purpose.

QUERY 13th.—Bitter Wine of Iron. What is the best formula for this preparation, in which citrate or tartrate of iron is presented along with one or more bitter tonics and aromatics, combining efficiency as a chalybeate tonic with elegance and agreeability in appearance and taste; with comments on similar preparations now in use.

Answered by Mr. J. T. Shinn, of Philadelphia, in a paper presented and read by Mr. G. F. H. Markoe, who also presented some specimens of the Bitter Wine of Iron.

A discussion arose on the merits and characteristics of this article, in which Messrs. Markoe, Maisch, Procter and Parrish participated; Mr. Parrish maintaining that Bitter Wine of Iron is and should be a weak preparation of Iron.

QUERY 14.—Glycerin—its mission (so to speak) in Pharmacy as a remedy, as an adjuvant, and as a solvent.

Answered by Mr. W. J. M. Gordon, who showed samples of various preparations made with glycerin, instead of sugar, where sugar is required. This elicited considerable discussion, in which surprise was exhibited at the low price at which glycerin is produced, and the quality and mode of manufacture was alluded to.

QUERY 15th.—It has been stated that the poisonous properties of *Rhus toxicodendron* reside in a volatile alkaloid. Is this true? Is this alkaloid dissipated when the leaves are dried? Can it be isolated in a state fit for medical use, or can the properties of the leaves be preserved in some form as a pharmaceutical preparation?

Mr. Maisch, by whom this was accepted, asked to have it continued, which was granted.

QUERY 16th.—The leaves of *Solidago odora* possess the odor of anise. Are their medicinal properties due to a volatile oil, identical in composition with the oil of anise?

A letter was read by Mr. Taylor from Mr. Heinitsch, of Lancaster, Pa., giving a partial answer to the two queries which he accepted, viz. Nos. 16 and 18.

QUERY 17th.—The oil of *Erigeron canadense* is frequently employed in medicine for uterine haemorrhage. Is its reputation deserved? Where is it chiefly produced? In what proportion does the herb yield oil? and what are its physical and chemical properties?

Not answered.

QUERY 18th.—The taste of Dittany (*Cunila Mariana*) is very like that of horse mint (*Monarda punctata*). Does the volatile oil of the former resemble that of the latter in physical and chemical properties?

See answer to No. 16.

QUERY 19th.—Spatulas, stirring-rods, agitators and mechanical stirrers used in pharmaceutical preparations; their material and quality, form and construction, with critical remarks.

Answered by Mr. T. S. Wiegand, of Philadelphia, whose paper was read by Prof. Procter.

Some pharmaceutical preparations were exhibited by W. J. M. Gordon & Brother, and called forth much commendation by the members.

On motion adjourned until 7½ o'clock.

Thursday Evening—Fourth Session.

At eight o'clock the President called the meeting to order. The minutes of the last session having been read were, on motion, adopted.

A letter was received from Mr. Larz. Anderson offering to conduct the members of the Association through the extensive wine cellars of the late Mr. Longworth should they desire to visit them. On motion the letter was accepted.

The business of deciding upon a place of meeting for the Association next year being in order,

Mr. A. E. Ebert suggested Cincinnati.

“ J. F. Moore “ Baltimore.

“ P. W. Bedford “ Boston.

Dr. Squibb moved that the Association meet next year in

Boston. The motion was unanimously adopted. The time of meeting was added as an amendment which was accepted, and the time named as the first Tuesday in September next, at 3 o'clock, P. M.

Dr. Squibb read the following proposition of the President, That the Executive Committee be directed to withhold the volume of proceedings from all members who may be three years in arrears in their payments to the Treasurer.

A discussion of the above proposition was maintained by Messrs. Squibb, Bedford, Moore, Parrish and Markoe. Dr. Squibb read from Art. II., Section IV., of the Constitution, "that a member may lose his right of membership by neglecting to pay said contribution for three successive years." Mr. Moore offered as an amendment, "Notification being first given," which was accepted.

The resolution, as amended, was after much debate finally carried.

The Business Committee offered the following resolution:—

Resolved, That a Committee of two be appointed to examine the books of the Treasurer in regard to all arrearages, and to report to the next annual meeting the number and names of members who may be in arrears, the condition under which these arrearages may have occurred, and suggestions for the disposal of delinquent memberships. Adopted.

Messrs. Moore and Baxley (the Treasurer) were appointed said Committee.

The Business Committee offered the following resolution:—

Resolved, That members who may have received the volume of Proceedings and are in arrears with their annual dues to the Treasurer, and who may return his bills unpaid, or offer to resign with such arrearages unpaid, shall be expelled from the Association, and their dismissal or expulsion be published in the volume of Proceedings after the roll of members. Mr. Parish objected to publishing the names of members.

On motion the resolution was adopted.

The subject of Life Membership being introduced, it was proposed to charge \$1 a year after ten years' Membership. Mr.

Taylor suggested that Life Members should not be annually assessed, but that they be charged for the Proceedings. Dr. Squibb suggested that the matter remain as it now is, allowing Life Members all their privileges, but should funds be wanted, raise the deficiency in some other way. On motion the whole subject of Life Membership was laid on the table. Carried.

It was recommended by the Executive Committee, that the Committee on the Drug Market, Scientific Queries and Business Committee, be made Standing Committees.

On motion the Business Committee were instructed to draw up an amendment to the Constitution making the above named Committees, Standing Committees. Carried.

In accordance with the recommendations of the Executive Committee, the following resolutions were adopted:

Resolved, That the Executive Committee be directed to value and insure all the property of the Association and present the bills for insurance annually to the Treasurer for payment. Adopted.

Resolved, That the Executive Committee be authorized to take such steps as the Chairman may deem best, to have all copies of the Proceedings, which may remain undistributed and unsold, returned to him by the next succeeding annual meeting, and present the bills of expenses incurred in effecting this to the Treasurer for payment. Adopted.

A motion to increase the dues of Members was rejected.

A motion that prizes be given by the Association, as suggested by the Executive Committee, was rejected.

Mr. Parrish gave notice that to-morrow morning he would offer a resolution abolishing the power of the Executive Committee to elect members during the interim, as provided by the Constitution, Art II., Section 2.

Mr. Parrish spoke to the effect that the suggestions of the Committee on Membership, as applied to the acuirements and election of candidates, be adopted. Mr. Haviland opposed it. Much discussion was had on this subject, but the suggestions were finally rejected.

Committee on Membership recommended a new form of Cer-

tificate of Membership. On motion a Committee of three were appointed to get up a new certificate. The chair appointed Messrs. A. B. Taylor, J. T. Shinn and Evan T. Ellis a Committee.

Committee on Scientific Queries presented the following for solution :

QUERY 1st.—The seeds of Cimicifuga Racemosa are numerous and easily obtainable. What are their characteristics, properties and chemical constituents?

Accepted by E. D. Jones.

QUERY 2d.—Gillenia Trifoliata and Stipulacea are found extensively diffused throughout the United States. Their roots are known to resemble Ipecacuanha in medical properties. Could they be made to substitute that costly drug, and would Fluid Extract, Wine and Syrup of Gillenia be available for use as substitutes for the corresponding preparations of Ipecacuanha.

Accepted by Albert E. Ebert.

QUERY 3d.—The Salts of Sanguinarina are employed to a considerable extent in some of the western cities. How do they compare with the Galenical preparations of the root, and what are their best combinations and modes of administration?

Accepted by Prof. R. Barthalow.

QUERY 4th.—Which process for Camphor Water is to be preferred, that of the U. S. Pharmacopœia or of the British Pharmacopœia?

Accepted by George F. H. Markoe.

QUERY 5th.—Could the Poppy be profitably cultivated in any part of the United States, for the production of Opium and Poppy Seed Oil?

Accepted by Edwin R. Smith.

QUERY 6th.—Can Citric Acid be profitably produced in this country, from Currants, Goosberries or Tomatoes?

Accepted by H. N. Rittenhouse.

QUERY 7th.—Can Peach Kernels be profitably used to procure the fixed and volatile Oil of Almonds?

Accepted by E. S. Wayne.

QUERY 8th.—Commercial Honey is much adulterated with or substituted by artificially prepared Syrup. How can the fraud be detected?

Accepted by E. S. Wayne.

QUERY 9th.—What is the best strength of Alcohol for the extraction of the several officinal Gum Resins, with a view to the production of eligible liquid representatives of the drugs.

Accepted by P. W. Bedford.

QUERY 10th.—A good permanent preparation of Pumpkin Seeds, (Pepo,

U. S. P.,) is a desideratum, with a view to its convenient use as a Tæni-fuge remedy. What is the best, with a formula?

Accepted by J. S. Higgins.

QUERY 11th.—What is the most convenient form of apparatus adapted to common use, for regulating the temperature at or below 160°, 140°, and 120° respectively, as directed in the evaporation of some of the officinal extracts?

Accepted by P. W. Bedford.

QUERY 12th.—What are the causes of the decomposition of the Syrups and other Vegetable solutions, the best precautions to prevent it, and the best means of restoring such preparations which have deteriorated?

Accepted by E. S. Wayne.

QUERY 13th.—In what preparations may Glycerin be used to prevent the deposition of apotheme? What is the minimum quantity that will answer the purpose, and will such preparations bear dilution?

Accepted by A. B. Taylor.

QUERY 14th.—How far is Glycerin capable of substituting Alcohol in extracting drugs for pharmaceutical preparations? Would such substitution be economical?

Accepted by W. J. M. Gordon.

QUERY 15th.—Is the cultivated Valerian, produced in New England, of equal quality with that imported from England and Germany, and are there any characteristic differences by which they may be distinguished?

Accepted by G. F. H. Markoe.

QUERY 16th.—The so-called Naphtha or Benzine derived from the rectification of coal oil is very variable in properties. How far do these properties fit it for use in Pharmacy, and what are the relations, if any, of specific gravity and solubility among these hydro-carbons?

Accepted by A. P. Sharp.

QUERY 17th.—What indigenous articles of the Materia Medica can be properly and profitably cultivated?

Accepted by W. G. Merrill.

There being now no especial business before the meeting the answers to queries, proposed at the last meeting, were called for, and the reading of such as had been answered proceeded with.

QUERY 20th.—What are the best vessels in which to dispense ointments and cerates, combining fitness with elegance and accuracy; and what is the best plan for keeping this class of preparations in the dispensing shop, so as to retard their tendency to oxidation?

Mr. Thompson, of Baltimore, explained by letter why he had not answered this query. On motion it was continued to him.

QUERY 21st.—*Marita cotula* and *Leucanthemum vulgare* are exten-

sively introduced into the United States; can their flowers, as has been repeatedly asserted, be made available for destroying insects, and may they be regarded as a substitute for the so-called "Persian Insect Powder," which is derived from the nearly allied genus *Pyrethrum*?

Partially answered by Mr. G. F. H. Markoe, who presented some dried specimens of the plant. Mr. Markoe asked to have the same subject continued to him another year, which was granted.

QUERY 22d.—Pumpkin seeds have acquired some reputation as a remedy in tænia. Does their curative power reside solely in a fixed oil?—if so, what is the best process of extracting it, and of dispensing it for internal use?

Mr. C. A. Tufts, of Dover, N. H., who accepted this query, informed the Association that he had had no opportunity of trying any experiments, and asked to have the subject continued, which was granted.

QUERY 23d.—An essay on gas-heating apparatus adapted to the various purposes of the apothecary, so as to enable him to conduct his processes in or near the shop; which shall combine efficiency with economy; illustrated by figures or specimens.

Mr. Bedford, of New York, asked to have this subject continued to him, as he had been unable to finish his investigations in time for this meeting.

QUERY 24th.—Valerianate of Ammonia. The crystalline salt made by the process of B. J. Crew is apt to have adhering valerianic acid, which renders it disagreeably odorous and moist. What is the best means of obtaining a dry, neutral salt?

No answer was received from Mr. Bullock, to whom it was referred, in reply to this question, but he explained through Mr. Bedford why he had not answered it. This query was dropped.

QUERY 25th.—What is the best formula for Elixir of Valerianate of Ammonia, which shall be nearly free from valerianic odor and elegantly aromatized?

Continued to Mr. J. Roberts, of Baltimore, by whom it was accepted.

QUERY 26th.—Is there a reliable test for the active resin from *Cannabis sativa* of the East Indies, whereby the genuineness of Extract of Indian Hemp may be satisfactorily and easily ascertained by the pharmacist?

Replied to by Mr. Procter, at length, in a paper read by him.

QUERY 27th.—What is the best kind of press for the pharmaceutical laboratory, on a moderate scale, combining great power with simplicity and easy manipulation? and can the principle of the hydraulic press be employed?

Mr. R. H. Stabler, of Alexandria, Va., who accepted this query, replied to it in an excellent paper, and illustrated the subject with elaborate drawings.

The reading of answers to these queries called forth an animated discussion, rendering the meeting one of great interest.

An invitation having been received from Dr. O. M. Langdon, in charge of the Longview Insane Asylum, near Cincinnati, to visit that Institution, it was on motion accepted, and a proposition to leave this Hall to morrow morning at 11 o'clock, in conveyances provided by the Cincinnati College of Pharmacy, was agreed to.

It now being 11 o'clock, on motion adjourned until 8½ o'clock to-morrow morning.

Adjourned.

Friday—Fifth Session.

At 8½ o'clock the President called the meeting to order. Minutes of the previous session, having been read and corrected, were adopted.

The subject of Amendments to the Constitution was introduced as unfinished business.

Dr. Squibb, from the Business Committee, introduced the following proposed amendment, relating to the duties of the Committee on the Drug Market, as Section 4th, Article IV., of the Constitution.

SECTION 4th.—The Committee on the Drug Market shall report annually the fluctuations in the supply and demand of imported Drugs, the variations in quality, and the adulterations and sophistications coming under their observation or reported to them by others; and they shall be authorized to report upon any adulterations and sophistications of immediate interest, through the Pharmaceutical journals, as soon as practicable after their discovery.

On motion this amendment was adopted.

Dr. Squibb of the Business Committee was requested to read separately certain Sections of the Constitution as it now is, and the proposed amendments, which are as follows:

Article II., Section 2d. Omit the words:

"Should an application occur in the recess" and all that follows them to the end of the Section.

The Amendment, on motion, was adopted.

Article IV., Section 2d, fourth line, omit the words, "the election of members in the recess."

The Amendment, on motion, was adopted.

Article IV., Section 3d, Omit all the words, "in this country or in Europe."

The Amendment, on motion, was adopted.

Resolved, that Article IV. of the Constitution be amended to read as follows:

Section 1st. There shall be five Standing Committees elected annually: an Executive Committee—a Committee on the Progress of Pharmacy—a Committee on the Drug Market, each to consist of five members; a Committee on Scientific Queries, and a Business Committee, each to consist of three members.

On motion this amendment was adopted.

Section 5th. The Committee on Scientific Queries shall report near the close of each Annual Meeting a proper number of questions of scientific and practical interest, the answers to which may advance the interests of Pharmacy, and shall procure the acceptance of as many such questions for investigation, and report before the next succeeding Annual Meeting, as may be practicable.

On motion the amendment was adopted.

Section 6th. The Business Committee shall be charged with the transmission of unfinished business from one Annual Meeting to another, and with collecting, arranging and expediting the business throughout the various sessions of the Annual Meetings.

On motion the amendment was adopted.

Mr. Parrish now proposed that all of the above resolutions be laid on the table, but after some discussion withdrew his proposition, and the above changes and additions were adopted as a whole.

The resolution passed at the fourth session withholding the Proceedings from those in arrears, being in conflict with the Constitution, was objected to by Mr. Parrish, but was not sustained. On motion of Mr. Moore the resolution was re-considered, and laid on table.

Objections were here made by Mr. Primm of Carondalet to the unparliamentary manner of conducting business of the meetings of the Association; the objections were answered by Dr. Squibb, and sustained by the Chair.

On motion, the resolution passed at the fourth session, relating to the expulsion of members in arrears, who return the Treasurer's bills unpaid, or attempt to resign after having received the current volume of Proceedings, &c., was re-considered, and laid on the table.

On motion, three more names were recommended to be added to the Committee, to examine the Treasurer's Books.

Motion was lost.

The following letter was received from Mr. Henry Sweet, Secretary of the Chicago College of Pharmacy:

CHICAGO COLLEGE OF PHARMACY,
CHICAGO, Sept., 21st, 1864.

To the Members of the American Pharmaceutical Association:

Gentlemen:

At a meeting of this College, held Sept. 5th inst., it was unanimously voted, that your Association be invited to convene its next Annual Meeting in the rooms of the College of Pharmacy in this city.

In view of the great impulse which would be given thereby to Pharmaceutical interests in the north-west, and the manifold and mutual advantages arising therefrom, we would urge your acceptance of this invitation.

(Signed,) *HENRY SWEET,*

Secretary.

It was moved by the Business Committee, "That the invitation of the Chicago College of Pharmacy be received with thanks of the Association, and that the Corresponding Secretary be directed to transmit to that College the explanation, that it was

deemed not advisable to have two successive meetings in the Western States."

The motion was adopted.

Mr. Edwin R. Smith presented his credentials as a Delegate from the Chicago College of Pharmacy, and explained how it occurred that the letter of the Chicago College was so late in reaching the Association.

The reading of the Queries proposed at the last Annual Meeting, and their answers, was now resumed.

QUERY No. 28.—Pure Tannic Acid being an odorless substance, is there an odorous substance in nutgalls that is found adhering to commercial Tannic acid? or is the odor very commonly noticed in that substance due to impure ether used in its preparation?

Answered by Mr. Procter.

QUERY No. 29.—Owing to the proverbial difficulty in keeping garlic from growing and drying up to its detriment, and to the fact that garlic may be prepared so as to keep like other drugs, by the destruction of the vitality of the bulbets and their partial desiccation, it is queried: Can the latter process be advantageously applied to the commercial drug? and if so how is it effected?

Answered by Mr. A. P. Sharp, of Baltimore.

QUERY 30th.—What course should be adopted by Pharmacists, in view of the present state of the liquor market, as regards factitious Brandies and Wines?

Referred by vote of Association to Edward Parrish, who answered in a paper read by him.

The following Queries having been carried over from a previous meeting of the Association, were disposed of as follows:

QUERY 1st.—Is there a principle in *Chenopodium Anthelminticum* analogous to Santonin? or does the medicinal power of this plant depend wholly upon its volatile oil?

No answer was received from Mr. Balmer, of Baltimore, to whom it was continued.

QUERY 2d.—Is there a crystalline active principle in *Capsicum*, or does it owe its pungency to a soft resin?

Answered by Mr. Parrish.

QUERY 3d.—What is the best permanent solvent for *Cantharidin*, suitable for making a pharmaceutical preparation for blistering?

No answer from Mr. J. F. Moore, to whom it had been continued, being received, the query was dropped.

QUERY 4th.—Has Propylamin, as it exists in Ergot, any power to pro-

duce uterine contraction ? and if so, does commercial Propylamin, from herring pickle, possess a like power ?

Continued to Dr. R. P. Thomas, not answered, Dr. Thomas deceased.

QUERY 5th.—What is the most convenient and economical arrangement by which the Apothecary can quickly and reliably ascertain the strength of Acid and Alkaline Liquids for pharmaceutical purposes ?

Continued to Dr. W. H. Pile, of Philadelphia, but not answered.

QUERY 6th.—Is the process of Dialysis applicable in Pharmacy ? if so, in what instances may it be employed ?

Continued to Mr. Procter, and answered by him.

QUERY 7.—What are the methods of detecting the adulterations of Olive Oil ?

Continued to Mr. Winter, of Baltimore, but no answer was received.

A paper on Southern Prickly Ash Bark, by Prof. R. Bridges, was presented in answer of a query referred to the late Prof. R. P. Thomas, in 1862, and on motion was referred to the Executive Committee, for publication : and the thanks of the Association were tendered to Prof. Bridges.

A volunteer paper was presented by Mr. T. S. Wiegand, on a Balance for the Apothecary ; as also the following from Mr. Maisch :

On Observations on Oleum \mathbb{A} Ethereum,

“ Quality of Sherry Wine,

“ French Brandy and Whisky,

“ Manufactures of the U. S. Laboratory,

“ Some Medicinal Spirits ;

also a paper from Prof. Parrish, on his method of teaching Practical Pharmacy.

On motion of the Business Committee, the following resolution was adopted :

That the papers voluntarily contributed to this meeting of the Association, be referred to a Committee of two members, who shall examine these papers and forward them to the Executive Committee, with a concise report, giving the reasons why they should or should not be published in the Proceedings ; and that the Executive Committee be guided in their publication by this report, the report to be also published.

On motion, the President appointed Dr. E. R. Squibb and Prof. F. F. Mayer as this committee.

All the papers read were also referred to the Executive Committee for publication.

Mr. Parrish called the attention of members to a new style of scales for Apothecaries' use, arranged so as to dispense with weights. The weight of the article weighed was read off on a graduated scale, containing both avoirdupois and Troy denominations. The Executive Committee were ordered to have a drawing made for publication in the Proceedings.

On motion of the Business Committee it was *Resolved*, That the thanks of this Association be tendered to Mr. Larz Anderson, and Dr. O. M. Langdon, for their kind invitations to visit the establishments over which they preside, and that the Corresponding Secretary be directed to carry into effect this resolution.

Resolved, That the thanks of the Association be tendered to the Cincinnati College of Pharmacy, for the attention and hospitality shown to the Association at this meeting.

The following Committees were announced by the Chair for the ensuing year:

Committee on Scientific Queries.—Wm. Procter, Jr., Chairman, Philadelphia; E. S. Wayne, Cincinnati; F. Stearns, Detroit; R. H. Stabler, Alexandria, Va.

Committee on Drug Market.—F. F. Mayer, New York, Chairman; W. S. Thompson, Baltimore; S. M. Colcord, Boston; E. L. Massot, St. Louis; Fred. Stearns, Detroit.

Business Committee.—E. R. Squibb, Brooklyn, Chairman; Robert R. Kent, Boston; George C. Close, Brooklyn.

On motion of Mr. Primm, of Carondolet, Mo., the following resolution was adopted:

Resolved, That the thanks of this Association are hereby tendered to the President, Secretary, Treasurer, and retiring Officers, for the able manner in which they have discharged the duties of their respective offices.

The minutes of all the previous sessions having been read, they were unanimously adopted.

On motion, the Association adjourned.

HENRY N. RITTENHOUSE, *Rec. Sec.*

At a meeting of the members who visited Longview Asylum, near Cincinnati, the following resolution of thanks was unanimously adopted:

Resolved, By the members of the American Pharmaceutical Association, and their friends of both sexes, assembled at Longview Asylum on this anniversary occasion, that we extend to Dr. Oliver M. Langdon, and the Steward and Matron of the Asylum, our cordial acknowledgments for their generous hospitality, and shall carry to our distant homes a lively recollection of the Institution and its Officers.

SUBSTITUTES FOR INDIAN INK.

A substance much of the same nature and applicable to the same purposes as Indian ink may be formed in the following manner:—Take of isinglass three ounces: make it into a size by dissolving over the fire in six ounces of soft water. Take then Spanish liquorice one ounce, dissolve it in two ounces of soft water over the fire in another vessel, then grind up on a slab with a heavy muller one ounce of ivory black with the Spanish liquorice mixture. Then add the same to the isinglass size while hot, and stir well together till thoroughly incorporated. Evaporate away the water, and then cast the remaining composition into a leaden mould slightly oiled, or make it up in any other convenient way. This composition will be found quite as good as the genuine article. The isinglass size mixed with the colors work well with the brush. The liquorice renders it easily dissolveable, on the rubbing up, with water, to which the isinglass alone would be somewhat reluctant; it also prevents it cracking and peeling off from the ground on which it is laid. A good Indian ink may be made from the fine soot from the flame of a lamp or candle received and collected by holding a plate over it. Mix this with the size of parchment, and it will be found to give a good deep color. Burnt rice has been by some considered a principal ingredient in the genuine Indian ink, with the addition of perfumes or other substances not essential to its qualities as an ink.

—*Chemical News, from British Journal of Photography.*

REPORT OF THE WEIGHTS AND MEASURES USED IN PHAR-

MACY,

BY MR. BARNARD S. PROCTOR.

[Abstract.]

"The author first made a comparison of the apothecaries' weights of our country with those of other civilized nations. Though there are forty different European pounds and as many ounces in general use, there were only two or three systems of pharmaceutical weights, and these not widely differing from each other. The English system, though good in the abstract, had no simple relation to the systems of other countries, nor to the other weights and measures of this country. Some of its own members were in an anomalous position. What was a fluid pound of apothecaries' weight? Was it 12 avoirdupois ounces, 12 troy ounces, or 16 avoirdupois ounces? A critical examination was then made of several suggested alterations in the weights and measures of pharmacy, those of Mr. Jacob Bell, Mr. Griffin, Dr. C. Wilson, and Mr. Warington, being especially noticed. The advantages and disadvantages of the weights and measures authorized by the Medical Council in the new Pharmacopeia were next reviewed, and a suggestion made that the ounce of that system should be divided into drachms and scruples. To get rid of the fractions of a grain, which would otherwise be appended to these drachms and scruples, the author proposed that the value of the grain should be slightly increased; so that, instead of 18.229 grains being contained in one scruple, there should be only 18; instead of 54.687 in the drachm, there should be but 54; and 432 in the ounce, instead of, as now, 437.5. This was as near an approach to an amalgamation of the troy and apothecaries' system as he could devise. The elaborate and ambitious system proposed by the American Pharmaceutical Association was next noticed, and then the French metrical system, the merits and demerits of all under various circumstances being carefully weighed. For ultimate general adoption the author thought the American octonary system to be superior to the metric decimal system; that, in short, doubling and halving

a number was better than multiplying or dividing by ten. He concluded by proposing the use of the American system, modified to meet the requirements and customs of the English."—*Proc. Brit. Pharm. Conf.*

THE MORPHIA SALTS OF COMMERCE.

BY MR. W. E. HEATHFIELD.*

The inquiries of the author had been directed to the amount of moisture existing in these salts, and also to the question as to whether codeia was present in them.

Three samples of hydrochlorate from different manufacturers had been examined, and found to contain, respectively, 5.8 and 9.8 per cent. of water, estimated by drying at 212°. The amount of alkaloid obtained from each of the above (dried at 212°) was 79.7, 76.7, and 74.3, the quantities thus varying inversely as the amount of water.

It was noticed that the samples containing the most moisture dissolved more readily in water, and their solutions were less colored than those which were originally drier.

Three samples of acetate were then examined in a similar way, and found to contain respectively 5, 10, and 12.6 per cent. of moisture. It was found that the sample containing least water fused and became dark-colored, with loss of structure on application of a water bath heat, while that containing the most water retained its pulverulent form unaltered at that temperature.

The morphia precipitated from these samples was found to be remarkably pure, being perfectly soluble in caustic potash, scarcely acted on by ether, and almost entirely free from codeia, as were also the mother liquors from which they were separated.

The author also quoted experiments by Mr. How, to show that, however feasible the conversion of morphia into codeia might appear on a comparison of their formulae, it could not be carried out; a substance isomeric with codeia had been obtained, but it was by no means identical.—*Chemical News.*

* Read at the meeting of the British Pharmaceutical Association.

NOTES ON THE CASES OF POISONING BY CALABAR BEANS
IN LIVERPOOL, 10TH AND 11TH AUGUST, 1864.

BY J. BAKER EDWARDS, PH.D., F.C.S.

Lecturer on Chemistry and Medical Jurisprudence at the Royal Infirmary
School of Medicine, Liverpool.

1. About seventy children were poisoned by eating the beans, of whom about fifty were treated at the Southern Hospital in this town. The quantity taken by each child was from half a bean to six beans. The nuts were cracked, and the kernel eaten without the spermoderm.

2. The children were mostly under ten years of age, and the poison generally produced nausea and vomiting in half an hour. The secondary symptoms, trembling, dizziness, and loss of power in the limbs, came on within an hour of administration. Within three-quarters of an hour to one hour after eating, the children were brought to the hospital and at once treated with emetics. In the one case which proved fatal, the emetics (sulphate of zinc and mustard water) failed to act, and the child died by syncope within a quarter of an hour of his admission. He was said to have eaten four beans.

3. The organs were found healthy, except some tuberculous disease in the lungs. The blood was very fluid. The heart contained fluid blood and clot in all the four cavities, indicating death by paralysis of the muscles of the heart. Although there was no reddening of the coats of the intestines, there had been purging, which had removed all faecal matter, leaving only in the intestines a whitish semi-fluid emulsion of the seed. The bladder was perfectly empty and contracted. There was really nothing in the *post-mortem* appearances to indicate the cause of death, except the peculiar contents of the intestines, and had these been removed by purging, there would have been nothing to distinguish between death by this poison and death by cholera. From my chemical analysis I should also infer that although in this instance circumstances favored the detection of the poison in the intestines after death, yet in a minimum fatal dose, or a prolonged purging before death, nothing would be found in the body to identify the poison or to account for death.

I am indebted to Dr. Fraser, of Edinburgh, who has investigated the subject with great ability, for a valuable communica-

tion during my analysis, and the tests Nos. 3, 4, and 5 in my analysis were suggested by him.

Conclusions.

1. The bean is edible in poisonous quantities, and although slightly rough in its flavor, does not appear to excite disgust or alarm when eaten alone, and would be undiscovered when mixed with food.
2. The symptoms are not always immediate, nor is vomiting induced, except when the dose is excessive; nor would the secondary symptoms, viz., dizziness, faintness, and loss of power in the limbs, excite sufficient alarm to call for medical assistance until life was really in immediate danger.
3. The symptoms would scarcely be distinguished from sudden indigestion or English cholera in time to save the life of the patient.

4. In criminal cases, nothing might be detected by autopsy or by chemical analysis to reveal the cause of death.

5. So insidious a poison should not only be stored, but also handled with great caution; its alcoholic solutions or extractive, when introduced into the circulation, acting as a slow but certain poison, leaving no trace in the body which can be identified by chemical tests in our present knowledge of the poison.—*Lond. Pharm. Journal*, Sept. 1, 1864.

MANUFACTURE OF VEGETABLE OILS.

Whether considered as a medium for the application of color in works of art, or of utility as the principal source of illuminating power where gas is unattainable, or as the lubricator without which all machinery, from the simple clock of the cottager to the most complicated and powerful engine, would be all but useless, the value of oil is incalculable; and a few words on its manufacture and the process of refining it cannot be uninteresting. To furnish these we were favored with a visit to the extensive works of Messrs. Pinchin and Johnson, who have two sets of premises: one, for the manufacture of oil, called Albert Works, on the Middlesex bank of the Thames, near Hammersmith; the other, for refining purposes,

in Cable Street, St. George's-in-the-East. The oils they manufacture are rape and linseed only, but their refining operations extend to the animal as well as the vegetable oils. The Albert Works have a river frontage of about 200 feet, and recede from the bank about the same distance, thus covering an area of more than three-quarters of an acre. The building consists of four stories; the manufacture is carried on in the lowest, the others being used as storage for the grain, which is hoisted from the barges by means of cranes worked by steam-power. The first object which arrests the visitor's attention is the engine, which is a small but beautiful piece of machinery of forty-five horse power. With the exception of the workmen's meal-times and Sundays, it is always at work night and day. From the engine-room the visitor is conducted to the manufactory, where, as soon as he can recover from the irritation in the eyes produced by the volatile oil escaping from the heated and bruised seed, the whole process presents itself before him.

The grain is received from the upper floor into a *hopper*, in which is a screen, the agitating of which removes all foreign substances, and suffers the seed alone to pass through its meshes. This falls between two faced, hollow, iron cylindrical rollers, which are heated by steam, and which, as they revolve, crush, or, as it is termed, *open the grain*. Thus opened, it is thrown on to a *steel plate calf*, fixed on a bed of solid masonry, which is constantly traversed by a pair of edge-runners, weighing from eight to nine tons, and travelling at the rate of sixteen revolutions per minute. They revolve in a strong framework attached to a vertical axis, which also, by means of a large cog-wheel at the top, which engages a wheel upon the main shaft, revolves slowly. A double motion is thus given to the grinders or edge-runners, one on their own axis and one on the iron plate, which we may consider the nether mill-stone. A raised border or rim prevents the seed from escaping from the plate, and the paste is brought regularly under the stones by means of rakes or sweeps attached to the vertical framework, and revolving with the runners on the surface of the plate. When the grain has been sufficiently ground, the paste is brought to an open portion of the rim, and falls over into perforated troughs placed to receive it. Through the perforations a considerable quan-

tity of oil oozes, and this, being considered purer than that which is obtained by expression, is conveyed to a cistern set apart for the purpose. The paste is next put into a jacketed kettle,—that is, one surrounded by a hollow chamber, into which steam is injected for the purpose of heating it. Within this kettle is an agitator or stirrer, so that all the paste is in turn brought to the heated surface and raised to an even temperature. Having remained in the kettle six minutes, it is collected in woollen bags, about eighteen inches long and six inches wide; each bag is placed between four layers of press hairs (a kind of horse-hair mat), and eight of them being thus prepared, they are ranged in two perpendicular rows between four grooved shelves of a hydraulic press. The pumps, worked by the steam-engine, are set in motion, and a pressure of 400 tons is speedily realized. The oil, being expressed, runs into an underground tank; the bags are then withdrawn, and on being removed, the residue presents itself in the form of what is known as linseed cake. These cakes are placed in a rack to cool, when they become so hard as not to be easily broken; they are then orderly stacked, and from time to time sent away in wagons or barges to supply the cattle-food market, for which purpose the cake is in great request.

A quarter of linseed, which only undergoes one pressure, yields an average of 120 lbs. of oil and 35 cakes of nutritious food, each weighing 8 lbs., or an aggregate of two hundred-weight and a half. Rape seed, which is twice ground and pressed, yields per quarter from 88 lbs. to 90 lbs. of oil at the first, and from 60 lbs. to 70 lbs. at the second pressure. Of these two kinds of oil-producing seeds upwards of 600,000 quarters are annually imported, and this mill alone works up 35,000 quarters per annum. Calcutta, Bombay, and Kurrachee are the great emporia for the seeds; and it is a remarkable fact that, whereas the last-named place, when it fell into the hands of the British in 1839, consisted of only about fifty wretched huts, inhabited by fishermen, it is now a thriving port, and one of the principal outlets for the oil-producing seeds of India.

After the oil has remained a few days in the receiving cistern, the parenchymatous matter subsides; it is then pumped into vats for a second settling, after which it is barreled and con-

veyed to the refinery. This is situated about a quarter of a mile down the Blackwall line, of which property it occupies nine arches in its rear. The premises are very large, and are used not only for refining vegetable but also animal oils. The casks of unrefined oil are hoisted to the upper floor by means of a crane worked by steam. Along this floor a large vat, capable of holding ten tons, is extended. It is lined with copper, is fitted with a horizontal agitator or fan, and is called the reception vat. Into this receptacle five tons of rape oil are decanted, an equal quantity of water is added, and the whole treated by chemical process. The agitator is set in motion, and after four or five hours the oil becomes thoroughly washed, its impurities having been removed. The agitation is then stopped, and the water and bleaching ingredients are allowed to subside. The oil is next drawn off into the boiling vat on the next story. This vat also is lined with copper, fitted with fans or agitators, and a coiled perforated tube; steam is admitted into the tube until a uniform temperature of 212 degrees is obtained. It is kept in this condition and continually agitated for about four hours, when all impurities having been thrown off, it is allowed to cool, assisted by the fans, which bring every portion in turn into contact with the air. At the end of eight or ten hours it is sufficiently cool to be drawn off into the filters, which are on the lower story. Each filter contains five tons. Having passed through the filter, the oil, fully refined, is pumped into appropriate tanks to be ready for barrelling, and receives the name of colza oil, on account of its illuminating properties; the true colza being an oil expressed from the *Brassica oleracea*, a variety of the cabbage plant, from whose seeds an oil much used on the Continent is expressed.

Some idea may be formed of the vast quantity of purified rape-oil consumed for lubricating and illuminating purposes, when this refinery alone sends out upwards of two thousand tons per annum. A single railway company consumes three hundred tons a year, and the Great Eastern requires a thousand gallons for a single voyage to New York. Whale, seal, and sperm oils are refined by a more simple process. They are simply filtered through flannel bags; the residue of the common kinds is called foots, and is one of the ingredients used in the manufacture of

soap. The deposit produced in the filtration of sperm oil is called spermaceti, and is very valuable, commanding a ready sale at £90 per ton. These oils are used for the purpose of illumination, only with the exception of sperm, which is employed in the cotton districts for the lubrication of spindles. Large quantities of olive oil are imported from Spain for lubricating machinery, and immense quantities of American lard are imported, pressed, and filtered for obtaining the oil known as lard oil, which is considered a good lubricator, and certainly has the quality of cheapness to recommend it.—*Lond. Pharm. Journ.*, Sept. 1, 1864, from *Mechanics' Magazine*.

ACCIDENTAL POISONING.

LIVERPOOL SUMMER ASSIZES.—CROWN COURT.—(BEFORE LORD CHIEF JUSTICE COCKBURN.)

Richard Poole surrendered upon an indictment, charging him with having, at Liverpool, feloniously killed and slain one John Lingard, on the 11th of April last. Mr. Aspinall, Q. C., and Mr. Samuell appeared for the prosecution; the Hon. Mr. Liddell, Q. C., and Mr. Potter for the defence. Prisoner pleaded not guilty.

It will doubtless be in the remembrance of our readers that the prisoner, a young man about twenty-five years of age, was a dispensing assistant in the establishment of Messrs. Clay and Abraham, chemists, Bold Street, and that the deceased was a plumber and glazier, residing in Mount Pleasant. On the 11th of April last, Dr. Nottingham prescribed a lotion and a powder for the deceased, who was suffering from an affliction in one of his eyes; the latter was to be composed of five grains of James's powder and six grains of Dover's powder. The prescription was taken, in accordance with the directions of Dr. Nottingham, to Messrs. Clay and Abraham's shop, in Bold Street, by Miss Witter, who was at the time staying at Mr. Lingard's house. The prescription was first handed to Mr. Whitton, who looked at it and then passed it on to one of the assistants, whose duty it was to copy it. That having been done, the prescription was given to the prisoner, who made it up. In doing so he had to use two bottles, and it appeared that the one containing James's

powder was placed upon the same shelf and almost side by side with another bottle of the same size, form, and appearance, which contained strychnine. Between these two there was only one other bottle, of the same description, the strychnine bottle being the second, and the James's powder the fourth, from the end of the row. Before the powder was handed to Miss Witter it was passed on to Mr. Whitten, who, after looking at it and smelling it, gave it to the young lady. The powder was given to the deceased the same night, at bedtime, and almost immediately afterwards he complained of feeling ill. His symptoms rapidly developed into such as accompany strychnine poisoning, and in the course of an hour he died.

Mr. Aspinall told the jury that the real question they would have to consider would be, not so much what was the cause of death, as whether or not the circumstances under which the prisoner made up the prescription had been such as would bring home to him the charge of manslaughter. In order to make out the charge in a case of this description, it would be necessary to show that the prisoner had been guilty of gross and culpable negligence. The row of bottles, to which allusion had already been made, had been placed in a box in precisely the same order as that in which they had stood upon the shelf, and were in court; and the jury would see that the strychnine bottle had, in addition to the label "strychnia" on it, a second label, bearing the word "poison." He submitted that if the other facts of the case were proved, the jury would be of opinion that the negligence was made out, even though the two bottles might at the time have been reversed as to position on the shelf.

Dr. James S. Smyth, of Rodney Street, deposed that he saw deceased before death. He was sent for at half-past ten; reached deceased's house at twenty-five minutes to eleven; death took place a quarter before eleven. The deceased, when first seen by witness, seemed in comparative repose. He inquired from Dr. Harris, who was in the room on his arrival, if he had seen the previous convulsion, and what was the nature of the attack. Dr. Harris said that it seemed to be epileptic. Mr. Merrick, partner to the deceased, was present, and remarked that Lingard told him that there must have been

strychnine in the powder that he had taken. Witness asked Lingard what he knew of strychnine ; he said that he had once taken it as a medicine, and recollects the taste. Witness asked for the prescription of the powder, and retired with Dr. Harris to consult as to what was to be done. They had not been more than two minutes in the adjoining room before they were recalled. Lingard was then in strong convulsions, and in these he died. Cross-examined: Are you aware that Lingard suffered from gall-stones? Witness: No. Would not they, if present, produce great pain? Witness: Yes; but not cramp in the legs, which, as far as I understood from those in attendance, was the only pain complained of.

Amongst the witnesses examined in support of the prosecution was Dr. Nottingham, who gave evidence as to the appearance of the deceased's body after death. He made a *post-mortem* examination of the body eighteen hours after death, when the blood was fluid; the scalp, the membranes of the brain, and the membranes covering the spinal cord, were charged with blood; there was a considerable quantity of a reddish watery fluid in the cavity of the skull; the lungs were heavily gorged with dark fluid blood; the heart was empty. The stomach and contents were placed in a jar and sealed, and other portions of the body were placed in three other jars, and these were handed over to Dr. Edwards. Taking into consideration the symptoms attending the death of the deceased, and the appearances visible at the time of the *post-mortem* examination, he considered the cause of death to be poisoning by strychnine.

Dr. John Baker Edwards, analytical chemist and lecturer on chemistry and medical jurisprudence at the Liverpool Royal Infirmary School of Medicine, stated that he had examined the stomach portion of the duodenum, spleen, and heart, the liver, blood, and kidneys, handed to him by the last witness. After detailing the analytical treatment to which he had subjected the contents of the jars severally, he said the results of repeated and various tests applied to them corresponded in appearance with those which would be produced by strychnine. He had poisoned two frogs and two mice, with all the physiological effects of poisoning by strychnine, by administering to them

small doses of the substance extracted from the contents of the jars which had before given the test results stated. From these experiments, he was satisfied that the stomach of the deceased contained a fatal quantity of strychnine. He also detected strychnia in the liver, in the kidneys, and in the structure of the tongue. He found traces of meconic acid in the stomach, but no antimony.

The Lord Chief Justice, addressing the witness,—Dr. Edwards, you have given your evidence with great distinctness and lucidity.

Joseph Whitton, an assistant in Messrs. Clay and Abraham's shop, said that on the 11th instant the prisoner was engaged as the regular dispenser, but had occasional assistance. It was his duty to make up the medicine. When Miss Witter brought Dr. Nottingham's prescription to him, he entered it in an order-book, and then passed it on to the prisoner. The powder contained James's powder and Dover's powder. He did not see the bottles from which the prisoner made it up. One bottle separated the bottle containing the James's powder from that containing the strychnine. The Dover's powder was kept on the dispensing counter on a shelf facing the dispenser's counter. There were five rows of bottles in an upright position, forming part of the dispensing counter, and in front of the dispenser. These bottles were in constant use, and they had no other bottles containing strychnine in the whole shop. The bottles were alphabetically arranged. The bottle between the strychnine bottle and the James's powder bottle contained Savine powder. When the lotion and the powder had been made up, it was placed by the dispenser on a till. Witness then took out the cork, examined the lotion, and found it correct. He next took the powder out of the wrapper, smelled at it, and being satisfied with it, he gave them both to Miss Witter. He could detect the Dover's powder by the smell; he did not look at the powder; the James's powder had no smell; neither had strychnine any smell.

Cross-examined by Mr. Liddell.—The bottles on this shelf had been rearranged since the 11th of April. That had been done in consequence of the presentment made by the coroner's jury. He was Messrs. Clay and Abraham's senior assistant.

It was Mr. Knowles's duty to arrange the bottles in that part of the shop, and also to put the drugs into the bottles. James's powder was very frequently used. James's powder and strychnine were so alike in color that had he opened the powder he would not have known the difference, but he could have detected it by the taste.

His Lordship.—But I suppose you are not in the habit of tasting the strychnine? (Laughter.)

Witness.—No, my Lord. (Renewed laughter.)

Cross-examination continued.—Prisoner had been two years in the employment of Messrs. Clay and Abraham. For some years previously he had been with a chemist at Southport. Witness had always found him very careful and attentive to his duties.

Richard Knowles, late assistant at Messrs. Clay and Abraham's shop, said the strychnine was kept at that establishment in a pulverized state. He had not examined the shelves on the 11th of April; but he did so the day previously, when he found they were in their right places. He was of opinion they were arranged in their proper order on the 11th of April.

Mr. Whitton was here recalled, and, in answer to Mr. Liddell, said that when he asked the prisoner what bottles he had made up the powder from, he pointed to the James's powder bottle and the Dover's powder bottle.

This was the case for the prosecution.

The Hon. Mr. Liddell, Q. C., then proceeded to address the jury on the prisoner's behalf. He said he was not going to deny that the deceased died from strychnine, for that would be utterly useless in the face of the evidence adduced. But there were two points to which he intended to address himself: one was, whether the strychnine was contained in the powder which the prisoner dispensed; and the second was, whether that powder, if so dispensed, was issued by him, and whether that issue was the result of gross and culpable negligence on his part. As to the point whether that powder was the powder which the prisoner dispensed, it was not for him to disprove, but for the prosecution to prove. Therefore, he had not any remarks to make upon that. There was one very curious thing in the case, that though the attention of the medical men

were called to the deceased in a quarter of an hour after the powder was taken, no search ever appeared to have been made for that paper in which the powder was contained, and not one tittle of evidence had been given to show what had become of it. The only scientific evidence that the prosecutors could bring before the jury to show them that strychnine was taken from the powder dispensed by the prisoner was, that they found traces of an acid called meconic acid. He did not say it was impossible to discover even a minute portion of such an acid as that, but he did say this, and he thought the jury would agree with him, that supposing this was a question of poisoning by opium, and that the evidence had been that a small discolouration took place, caused by so small a quantity that figures would not represent it, they would have to pause well before they arrived at their verdict. It was remarkable that the deceased had taken strychnine before that date, and it had not been shown them when he discontinued taking it. He would now pass on to deal with what he considered was the real and substantial evidence on behalf of his client. His learned friend, in his opening remarks, said that in order to bring the evidence home against the prisoner, they must make out a case against him of gross and culpable negligence. He (Mr. Liddell) would not attempt to define what negligence was, because he believed it to be impossible to define it. He had looked through a great number of cases upon the point, and had read many books upon the point, and he defied anybody to give an accurate definition of what negligence was in that case. But this much he would say, that the question of negligence was the question for the jury, and the jury only; and he should submit to them and to his Lordship that to make out negligence sufficient to justify the jury in finding the prisoner guilty of the felony of manslaughter, to say the least of it, it must be something more than mischance. Therefore, as he put it to the jury, the point that they would have to try, assuming, without admitting, that strychnine was given by the prisoner for James's powder, the question for them would be, did the evidence show that his conduct was the result of gross and culpable negligence, or was it not rather proved that the accident was the result of mischance? Before examining the evidence adduced, he wished to make a

passing remark, viz. that experience would teach them that, in all cases of that kind, when preliminary inquiries took place, when the matter was fresh in the mind of the public, and when the public mind was a good deal excited by sympathy for the poor deceased, there was a natural tendency to fix the blame upon somebody. And generally it very often happened that with that natural tendency upon their minds to satisfy doubts, it was said "Oh! it was so-and-so's fault," and that that somebody was a subordinate, and that he had to bear a great portion of the blame that attached to his superior. It was so in the case of the Egham accident, and he (the learned counsel) could not help expressing his surprise at reading the remarks made by the learned judge upon that case in his address to the grand jury. He said that in his opinion it was not right to throw the blame, when accidents of that kind took place, on persons in an inferior position; and that inferior persons employed upon the railway ought not to be made responsible for anything that occurred in consequence of a want of proper management or proper arrangements. Now he could not help drawing the attention of the jury to those remarks, which were made by a very learned judge. In that case, when the evidence was sifted, it turned out that proper arrangements were not made, and the prisoners arraigned were acquitted. If the jury, in considering the evidence in this case, should find that proper precautions were not taken to separate the poisons from the ordinary drugs; if they found that even in the state in which they were proper precautions were not taken to mark the poisons, not only by putting a label upon them, but also to make them distinguishable to the touch; if they found the prisoner was a well-conducted, careful person, bearing a high character for his position in life, who had always conducted his business in a careful and proper manner, and who had conducted his business upon that day in the ordinary manner, and had taken the ordinary precautions—there was no suggestion that he was drunk, that he was careless; there was nothing offered to show that by any act of his he was incapacitated to do his duty—and that they found that in the hurry of his business, and possibly, in the gloom of the dark part of the shop, at half-past five o'clock in the evening, by a mere slip of the hand he took down the wrong

bottle, and that, having done so, there was nothing to attract his attention to it, he made up the prescription in the usual way, taking the usual precautions before sending it out ;—he hoped, if he was able to make that out, the jury would exercise their discretion, and say it was rather a mischance accident than one due to gross and culpable negligence. After carefully going through the evidence, the learned counsel said that, supposing the strychnine had been kept at Messrs. Clay and Abraham's establishment in a crystallized state, and had been kept in corrugated bottles, the accident never would have arisen. There was the clearest admission on the part of the prisoner's superiors that they had not exercised proper precaution, in the fact that since the coroner's jury had made a presentment that the drugs should be separated from the poisons, they had been placed in a separate cupboard. Therefore the whole of these precautions being omitted, the prisoner was not answerable for that. He (Mr. Liddell) did not ask the jury for their sympathy,—he scorned to ask for it ; but he asked them as honest men and Englishmen, when they found that all the precautions he had alluded to had been omitted,—if they thought the accident arose in consequence of it,—he entreated them not to visit it upon the head of the young man who was then at the bar. The learned counsel called witnesses as to the prisoner's character.

Dr. Nicholl said he had always found him an unusually careful dispenser, in comparison with many others he knew.

Mr. Abraham said the prisoner had been two years in his employment, and during that time he had been one of the most careful, able, and attentive young men he had ever had in his shop.

His Lordship, in summing up, said that if the jury were of opinion that the death of the deceased was caused by an accident that might have happened to any careful and attentive man, it would be their duty to acquit the prisoner. According to the analysis of the very scientific gentleman (Dr. Edwards) who has been called before you, and who gave his evidence with a clearness and scientific precision which appeared to me extremely deserving of praise—if James's powder had been present it would have been inevitable that antimony would have been

discovered, and there was none. Dover's powder was to a certain extent traceable, because there was that which indicated the presence of opium. Therefore it is suggested that strychnine was substituted by mistake for James's powder, the strychnine bottle being in most dangerous proximity to the James's powder. It was to be regretted that the arrangement since made by the firm of Clay and Abraham with respect to their drugs and poisons had not been made before the death of the deceased, as in that case the accident would never have occurred.

The jury after consulting together about five minutes, returned a verdict of "Not guilty," and the prisoner was immediately discharged.

CASE OF POISONING BY STRYCHNINE.—ACTION AGAINST
THE CHEMISTS FOR DAMAGES.

Liverpool Assizes.—Nisi Prius Court, August 17.—(Before Mr. Baron Pigott.)
LINGARD, ADMINISTRATRIX, *v.* CLAY AND ABRAHAM.

This was a special jury cause, brought under Lord Campbell's Act, for the recovery of damages. The circumstances which were the cause of action have excited considerable attention, and gave rise to a trial for manslaughter during the present assizes. Mr. Attorney-General James, Q. C., Mr. Aspinall, Q. C., and Mr. Samuell, were retained for the plaintiff; Mr. Temple, Q. C., and Mr. Quain, were counsels for the defence.

When the case was called on,

Mr. Attorney-General James, addressing his Lordship, said—
We are going to take a verdict, my Lord, for £1500.

His Lordship.—A verdict by consent, is it?

The Attorney-General.—If your Lordship will wait for one moment, it is necessary to say a few words. The action is brought under Lord Campbell's Act, and as there must be an apportionment, no doubt the jury will take what we suggest. The verdict will be for £1500; £500 to the widow, and £500 each to the two younger children. The eldest child comes in for some property by the death of the father.

His Lordship.—You must give the eldest child something.

The Attorney-General.—Yes, my Lord, we will give him, say, £1; though I don't know that it is necessary.

His Lordship.—Well, I thought that he had sustained some injury.

The Attorney-General.—Well, say a shilling to the other; then the verdict will be for £1500. 1s.

Mr. Temple.—Now, my Lord, this was an action brought by the administratrix of a person who met with his death in consequence of a person in the employ of the defendants, who are eminent chemists in this town, having unfortunately mixed strychnine, instead of James's Powder, with the medicine that had to be administered. Now, I was prepared with a large body of evidence, comprising nearly all the most eminent physicians and surgeons in this town, and also a great number of chemists from different parts of the country—amongst the rest, from the chemists of Her Majesty, who have dispensed the medicine of the Royal Family for the last thirty years—for the purpose of making out that, although this sad mischance had taken place, the defendants had always conducted their business with great care, and had so arranged the various medicine bottles, including poisons, as in their best judgment would be most likely to guard against accident. I have this vast body of evidence to express approval of the mode adopted by the defendants, and also to show that it was very commonly adopted and most approved of by the profession. I think it but justice, with the consent of the Attorney-General, to make that statement; but, as your Lordship knows, it would have amounted to no defence. We still should have been liable at law. And I may say that Messrs. Clay and Abraham have said to me that, even supposing they could have hoped for a verdict on any strictly legal ground, they should feel it their bounden duty, under the circumstances, to pay to the widow such a sum as might be considered reasonable and proper. For these reasons the defendants have consented, as has been stated, to a verdict for £1500.

His Lordship said—Gentlemen of the jury, I think we may all say we approve of the course the defendants have taken. For my own part, I must say, we all know accidents will happen, as the common saying is, in the best-regulated establishments; but I would make this one further observation, that in these matters of dealing with poisons I think it would be an excellent

practice for everybody to keep them under lock and key, and separate from any other and harmless drugs. I do not by any means say the defendants have not done so. I am glad there would have been all this testimony to the good management of the establishment; and their having consented to a verdict is, I think, an act of good feeling on their part. The damages will be £1500, £500 of which will go to the widow. Under the Act of Parliament, you are to say how the damages shall be divided between the widow and children, if it is the case of a parent. In this case it is the parent, and £500 will go to the widow and £500 each to the younger children. The eldest child comes into some money by the death of the parent, and one shilling is sufficient, in view of the parties who are watching the case in his interest. You will find a verdict to this effect.

The jury found accordingly.—*London Pharm. Journ.*, September 1, 1864.

ON DIGITALINE,

By M. LEFORT.

The following account of the two foreign digitalines met with in commerce will be of interest to English readers, since this country is, we believe, entirely supplied with the article from Continental sources:—

1. *German or Soluble Digitaline*.—This is said by the author to be made by Merck, of Darmstadt. It is of a yellowish white color, neutral to test paper, completely and readily soluble in water and alcohol. It is, on the contrary, but slightly soluble in ether, sulphide of carbon, and benzole. Tannin completely precipitates it from an aqueous solution. In one particular it will be seen, that of solubility in water, this article differs essentially from that described in the British Pharmacopoeia.

When the powder is dropped into hydrochloric acid it immediately dissolves, forming a yellow solution, which gradually turns brown and finally becomes green. The green color, however, is less bright than that given by the insoluble digitaline to be presently described, and the solution also remains transparent longer.

As the green color is developed the solution becomes turbid, and emits an odor resembling that of powdered digitalis or the tincture, and deposits a brown substance, which seems to be a compound of digitaline or of one of the principles accompanying with hydrochloric acid.

When exposed to the vapor of hydrochloric acid this soluble digitaline turns rapidly brown, but exhibits no green color.

Examined by a microscope with a high power the powder is seen to consist of small semi-transparent fragments, sometimes presenting sharp edges, but of no definite crystalline form. An alcoholic solution evaporates spontaneously to a clear varnish, and no traces of crystallisation can be observed.

2. *French, or Insoluble Digitaline.*—The color of French digitaline varies from a yellowish white to a bright yellow. It is but very slightly soluble in cold water, a litre only dissolving about 0.50 grammes; it is very soluble in alcohol. Sulphuric ether, sulphide of carbon, and benzole dissolve a small quantity; tannin precipitates it from a saturated aqueous solution.

The powder dropped into hydrochloric acid gives a yellow solution which, in a few minutes, passes from a bright to a deep green, according to the quantity of digitaline employed; but as the green tint is produced, a deep green-colored substance is deposited, and a smell of digitalis is evolved.

When exposed to the vapor of hydrochloric acid it is first colored yellow, then brown, and afterwards green, the characteristic smell of digitalis becomes very apparent. The green powder (like the fresh powder of fox-glove leaves) becomes partially decolorised by exposure to sunlight, but the color can be restored by another exposure to the vapors of the acid.

This last reaction suffices to distinguish between soluble and insoluble digitaline, and the author considers it sufficient to prove the presence of the latter.

An alcoholic solution of French digitaline (Menier's,) left to evaporate spontaneously, and then examined by the microscope, showed a multitude of small spots, sometimes round and sometimes oval, which gave to the residue the cellular aspect of organised structure. This appearance the author considered to support the opinion of Hemolle, who supposed that insoluble

digitaline was never a single and constant product; and he, in fact, determined that French digitaline contained some volatile matter which communicated its characteristic odor.

The whole of M. Lefort's experiments showed that French and German digitaline differ considerably in their chemical and physical properties, and he is disposed to infer that as great differences may be found in their therapeutical properties.

With regard to the separation of digitaline by means of dialysis, the author found that a simple solution of the substance quickly dialysed, and the digitaline could easily be found in the diffusate. But when a mixture with animal and vegetable substances was placed on the dialyser, the deposite obtained on evaporating the diffusate gave but indistinctly the characteristic reactions of digitaline. Among these characters the most conclusive appear to be the bitterness of taste, the green coloration of liquid hydrochloric acid, and the development of the peculiar odor of digitalis on exposure to the vapor of hydrochloric acid.

[It may interest some of our readers to know that the volume of Gmelin's "Chemistry" just issued contains an excellent account of digitaline, and the various processes for obtaining it.—ED. C. N.]—*Chem. News*, Aug. 27, 1864.

ON THE RED VARIETY OF PITAYO BARK.

BY J. E. HOWARD, F. L. S., &c.

Mr. Robert Cross, who was employed to collect seeds of the *Cinchonæ* on behalf of the Indian Government, in the district of Popayan, sent over recently the bark, together with the seeds, of that which he calls "The red variety of Pitayo, the best of all." He gave ten ounces of this bark to Dr. Jameson, of Quito, who says it is the true Pitayo bark of New Granada, and extracted 3.2 per cent. of quinine from it. Mr. Markham, in sending me the seeds, writes as follows:—"I enclose some specimens of bark and some seeds of *Cinchona Pitayensis*, collected by Cross last August. They were collected from trees growing on lofty ridges near Popayan, where it sometimes freezes,—temperature 30° to 60° Fahrenheit."

The bark was at once recognized as the superior quality of

Pitayo bark, which bears a high value in this market, as well as in Paris, equal in fact to that of Calisaya. From a small portion of that given to me, gathered by Cross, I obtained the surprising amount of 8.6 per cent. of alkaloid soluble in ether, and the portion which formed crystalline salts indicated like results with those mentioned by Dr. Jameson.

There is, I believe, no doubt that this is the same sort of bark which was given by Mr. Delondre to Dr. de Vry, described by him as the root-bark of *C. lancifolia*, and from which Dr. de Vry obtained 8.66 per cent. of alkaloid. If I understand rightly, this identity is admitted on all sides; but the questions remain,—First, is it the produce of *C. lancifolia* (Mutis)? Second, is it root-bark at all? As to the first question, it is certainly an error to identify the *C. Pitayensis* with the *C. lancifolia* (Mutis). I send a drawing of the *C. Pitayensis*, which was made by Mr. Fitch from specimens gathered by Mr. Jervise, and now found in the herbarium of Sir William J. Hooker, at Kew. They comprise the *roja*, or red, and *naranjada*, or orange, varieties,* and are accompanied by characteristic specimens of the bark of these two sorts. Between these no botanical difference that I am aware of can be traced, and both constitute a species markedly distinct from the *C. lancifolia* (Mutis),† which has been very well figured both by Weddell and Karsten; whilst the *C. Pitayensis* has never till now been represented, as far as my knowledge extends, although it is certainly one of the very best kinds of Cinchona, and far superior to the *C. lancifolia* (Mutis), which last has been for a long time almost entirely neglected by the collectors.

In the next place, is it root bark? I presume not, as Cross never intimates anything of the kind respecting the specimen bark which he sent home. The appearance of the bark, which is peculiar, might most readily correspond to that which would be produced by shrubs, growing high up the mountains, and in so low a temperature as is above described. This is exactly the climate and circumstances to favor the production of qui-

*I have also from Paris the *morada* and *blanca* varieties exhibited in sections of branches, but not in flowers or fruit.

† I have specimens given by Mutis to Bonpland, and presented by the authorities of the Museum of the Jardin des Plantes; also an excellent specimen gathered by Dr. Karsten.

nine in the bark, as has been well shown by Dr. Carsten, and exemplified also in the Calisaya of St. Fé in particular. No doubt the Indian Cascarilleros may strip roots and all, and mix these with the bark, and, in the fragmentary condition in which it comes, it is impossible to distinguish the bark of the different parts of the plant; but the extraordinary produce I must persist in believing to be due to the circumstances above named, and not to that of its being root-bark, which, as regards the great bulk of the collection, I do not believe.

Whilst compelled to differ on this point, I most willingly bear my testimony to the great value of the table given in last month's Pharmaceutical by Dr. de Vry. The exactness and fidelity with which these able researches are reproduced, enable all persons to form their own conclusions, and to me the results seem to indicate a general inferiority in the root-bark as compared with the trunk of the Calisaya.—*Lond. Pharm. Journal, August, 1864.*

NOTES ON THE NEW ALMADEN QUICKSILVER MINES,

By B. SILLIMAN, JR.

The New Almaden quicksilver mines are situated on a range of hills subordinate to the main coast-range, the highest point of which at the place is 1200 to 1500 feet above the valley of San José. Southwest of the range which contains the quicksilver mines, the coast-range attains a considerable elevation, Mt. Bache, its highest point, being over 3800 feet in height.

New Almaden is approached by the railroad running from San Francisco to San José, a distance of 45 miles. In the course of it there is a rise of 100 feet, San José being of this elevation above the ocean. From San José to New Almaden the distance is 13 miles, with a gradual rise of 150 or perhaps 200 feet.

The rocks forming the subordinate range in which the quicksilver occurs, are chiefly magnesian schists, sometimes calcareous and rarely argillaceous. As a group they may be distinguished as steatitic, often passing into well characterized serpentine. Their geological age is not very definitely ascertained, but they are believed by the officers of the State Geological Survey to

be not older than Cretaceous. But few fragments of fossils, and these very obscure, have yet been found in these metamorphic rocks. At a point just above the *umps*, behind the reduction works at the hacienda (or village), there is an exposure, in which may be clearly seen in projecting lines the waving edges of contorted beds of steatite and serpentine, interspersed with ochery or ferruginous layers, more easily decomposed; and the partial removal of the latter has left the steatitic beds very prominent.

The mine is open at various points upon this subordinate range over a distance of four or five miles, in a northeast direction. The principal and the earliest workings of the mine were in a right line, but little more than a mile distant from the hacienda. The workings are approached, however, by a well-graded wagon-road, skirting the edges of the hills, which is $2\frac{1}{8}$ miles in length.

It appears, partly from tradition, and partly from the memory of persons now living, that the existence of cinnabar upon the hill was known for a long time prior to the discovery that it possessed any economic value. In fact, upon the very loftiest summit of this subordinate range, cinnabar came to the surface, and could be obtained by a slight excavation, or even by breaking the rocks lying upon the surface. In looking about for physical evidences such as would aid the eyes of an experienced observer in detecting here the probable presence of valuable metallic deposits, one observes on the summit of the hill, at various points along the line of its axis for two or three miles, and also beyond, toward the place called Bull Run, occasional loose boulders of drusy quartz, with more or less well characterized geodes and combs; accompanying which is an ochraceous or ferruginous deposit, such as frequently forms the outcrop of metallic veins. There is, however, no such thing as a well characterized vein, the quartz and its associated metals occurring rather in isolated masses or bunches segregated out of the general mass of the metamorphic rocks, and connected with each other, if at all, somewhat obscurely by thread veins of the same mineral.

The main entrance to the mine at present is by a level about 800 feet long, and large enough to accommodate a full-sized

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railroad and cars. This level enters the hill about 300 feet from its summit, and is driven into a large chamber, formed by the removal of a great mass of cinnabar, leaving ample space for the hoisting and ventilating apparatus employed in working the mine.

At this point a vertical shaft descends to an additional depth of nearly 300 feet, over which is placed a steam "whim" with friction gearing and wire rope, worked by a steam engine, and by means of which all the ore from the various workings of the mine is conveniently discharged from the cars, which convey it out of the level to the dressing floors.

The first thing which strikes the observer on entering the mine is the liberal scale of its exploration. Everything indicates a liberal and judicious use of capital in the development of a property which, upon any other principle of exploration, would probably have been unremunerative. We note also the absence of the usual galleries or levels, cut at regular distances of ten fathoms, common in the exploration, for example, of copper mines, and of other metallic deposits in which the ore is confined to well characterized veins.

In order to reach the lower workings of the mine, the observer may employ the bucket as a means of descent, or he may, in a more satisfactory manner, descend by a series of ladders and steps, not in the shaft, but placed in various large and irregular openings, dipping for the most part in the direction of the magnetic north, and at an angle of 30° to 35° . These cavities have been produced by the miner in extracting the metal, and are often of vast proportions; one of them measures 150 feet in length, 70 feet in breadth, and 40 feet in height—others are of smaller dimensions; and they communicate with each other, sometimes by narrow passages, and at others by arched galleries cut through the unproductive serpentine.

Some portions of the mine are heavily timbered to sustain the roof from crushing, while in other places arches or columns are left in the rock for the same purpose.

The principal minerals associated with the cinnabar are quartz and calcareous spar, which usually occur together in sheets or strings, and in a majority of cases penetrate or subdi-

vide the masses of cinnabar. Sometimes narrow threads of these minerals, accompanied by a minute coloration of cinnabar, serve as the only guide to the miner in re-discovering the metal when it has been lost in a former working.

Veins or plates of white massive magnesian rock and sheets of yellow ochre also accompany the metal. Iron pyrites is rarely found, and no mispickel was detected in any portion of the mine; running mercury is also rarely, *almost never*, seen.

The cinnabar occurs chiefly in two forms, a massive and a subcrystalline. The first is fine granular, or pulverulent, soft, and easily reduced to the condition of vermillion; the other is hard, more distinctly crystalline, compact and difficult to break; but in neither of these forms does it show any tendency to develop well formed crystals. It is occasionally seen veining the substance of greenish white or brown compact steatite or serpentine.

The ores are extracted by contract, the miners receiving a price dependent upon the greater or less facility with which the ore can be broken. By far the larger portion of the work people in the mines are Mexicans, who are found to be more adventurous than Cornishmen, and willing oftentimes to undertake jobs which the latter have abandoned. The price paid for the harder ores in the poorer portions of the mine is from \$3 to \$5 per cargo of 300 lbs. This weight is obtained after the ore is brought to the surface and freed by hand-breaking from the superfluous or unproductive rock; by this arrangement, the company are secured from paying for anything but productice mineral. All the small stuff and dirt formed by the working of the "labors," are also sent to the surface to form the adobes used in charging the furnaces.

It has often happened in the history of this mine, during the past fifteen years, that the mine for a time has appeared to be completely exhausted of ore. Such a condition of things has, however, always proved to be but temporary, and may always be avoided by well directed and energetic exploration. Upon projecting, by a careful survey, irregular and apparently disconnected chambers of the mine in its former workings in a section, there is easily seen to be a general conformity in the line of direction and mode of occurrence of the productive ore.

masses. These are found to dip in a direction toward the north, in a plain parallel, for the most part, to the pitch of the hill, but at a somewhat higher angle. An intelligent comprehension of this general mode of structure has always served hitherto in guiding the mining superintendent in the discovery of new deposits of ore.

Since the settlement of the famous law-suit, which has so long held this company in a condition of doubt, the new parties, into whose hands the property has now passed, have commenced a series of energetic and well directed explorations at various points upon the hill, with a view to the discovery of additional deposits of ore. At one of these new openings, distant at least 500 feet from the limit of the old workings, and not more than 200 feet from the summit of the hill, a deposit of the richest description of the softer kind of cinnabar has been discovered, which, so far as hitherto explored, has a linear extent of at least 70 or 80 feet, and in point of richness has never been surpassed by any similar discovery in the past history of the mine. A charge of 101,000 pounds, of which 70,000 were composed of this rich ore, 31,000 pounds of "granza," or ordinary ore, and 48,000 pounds of adobes, worth 4 per cent, making a total charge of 105,800 pounds, yielded on the day of our visit, 460 flasks of mercury at $76\frac{1}{2}$ pounds to the flask. This yield is almost without parallel in the history of the mine. The only preparation which the ores undergo, preparatory to reduction, consists of hand-breaking, or "cobbing," for the removal of the unproductive rock.

The small ores and dirt hoisted from the mine are made into "adobes," or sun-dried bricks, sufficient clay for the purpose being associated with the ore. The object of these "adobes" is to build up the mouths of the furnaces to sustain the load of richer ores. No flux is employed, there being sufficient lime associated with the ores to aid the decomposition of the sulphurets.

The furnaces are built entirely of brick, in dimensions capable of holding from 60,000 to 110,000 pounds, according to the character of the ores employed. The chambers are fired from a lateral furnace, fed with wood, and separated from the

ore by a wall pierced with numerous openings by the omission of bricks for that purpose.

Connected with the furnace is a series of lofty and capacious chambers, also of masonry, through which the whole product of combustion is compelled to pass alternately above and below, from chamber to chamber, until all the available mercury is condensed. The draft from these furnaces is carried by inclined stacks up to the top of a lofty hill several hundred feet distant; and here the sulphurous acid and other effete products of the furnace are discharged. Formerly, no precautions were taken to prevent the escape of mercury through the foundations of the furnace to the earth beneath: now, the furnaces stand upon double arches of brick-work, and plates of iron are built into the foundations, so as to cut off entirely all descending particles of the metal and turn them inward. To be convinced of the importance of this precaution, it is sufficient to watch the operation of the furnace for a few moments, when an intermittent stream may be seen to flow into a reservoir provided for it, and which by the former process was completely lost in the earth.

On taking up the foundations of some of the old furnaces, within the last two years, the metal was found to have penetrated, or rather permeated, completely through the foundation and clay of the substructure down to the bed-rock beneath, a depth of not less than 25 or 30 feet. Over 2000 flasks of mercury were thus recovered in a single year from the foundations of the two furnaces. This loss is entirely avoided by the improved construction which has been adopted.

The whole process of reduction is extremely simple, the time occupied from one charge to another being usually about seven days. The metal begins to run in from four to six hours after the fires are lighted, and in about sixty hours the process is completed. The metal is conducted through various condensing chambers by means of pipes of iron, to a "crane-neck," which discharges into capacious kettles. It undergoes no further preparation for market, being quite clean from all dross.

Deducting 2½ years, during which the mines were in a state of inactivity, pending the decision of the law-suit, the average monthly product for 12½ years has been not far from 2,500

flasks, of 76½ pounds each, of mercury. The selling price in San Francisco is, at present, and has been for some time past, 75 c. per pound, while in London and New York it has ranged from 40 to 50 c. per pound.

San Francisco, May, 1864.

—*Amer. Jour. Sci. and Arts.* Sept., 1864.

DROPS.

By CHARLES W. QUIN, F. C. S.

Mr. Frederic Guthrie, Professor of Chemistry and Physics at the Royal College, Mauritius, has lately brought before the Royal Society the results of some investigations recently made by him into the laws which govern the formation of drops, an account of which cannot fail to interest our readers.

On turning to the subject of drops, as treated of in "Parrish's Practical Pharmacy," or any other standard pharmaceutical work, we cannot help being struck with the great difference observable in the relative size and weight of the drops of different fluids. Thus, although we are always taught that a fluidrachm contains on an average sixty drops, each of which is equal to a minim or a grain, we find it stated in Parrish, on the authority of Durand, that a fluidrachm of distilled water, hydrocyanic acid, or weak ammonia, contains only forty-five drops, or in other words that a drop of either of these substances is one-third greater than it is generally supposed to be. In the case of other fluids the discrepancy is in the opposite direction—for instance, a drop of crystallizable acetic acid, diluted alcohol, tincture of opium, and several other liquids used daily by the pharmacist, is only half the supposed size. A patient, therefore, who is prescribed acetic acid in drops gets less than the supposed quantity, while the one who is ordered hydrocyanic acid by the same measure would get more than the proper amount.

According to the same authority, the bottle or measure from which the liquid is dropped has a great influence on the size of the drops. Thus, according to Parrish's experiments, seventy-three drops of acetic acid dropped from a pint tincture bottle made up a fluidrachm, while 102 drops were necessary when a minim measure was used. These differences seem to show the

difficulty of obtaining a standard drop—a difficulty which is still more increased by the knowledge that even when the same vessel and liquid are used the differences are almost as great as those already cited. Thus, in experimenting on water with ounce vials, Parrish found that in seven trials the number of drops required to make up a fluidrachm varied between thirty-two and sixty-five. The necessity, therefore, for Professor Guthrie's investigations is at once apparent.

The Professor sets out by defining a drop as any mass of liquid matter whose form is visibly influenced towards the spherical by the attraction of its parts, and whose sensible motion or tendency is towards the earth. He then goes on to exclude from consideration drops which are formed under indefinite, or at any rate unmeasurable, circumstances, such as rain drops, including only those that are formed under fixed and determinable conditions. The drops which form the subject of experiment may, therefore, be defined as masses of liquid collected or held together by the attraction of their parts, and separated from each other by the attraction of gravitation. This definition includes upward-moving drops, which are formed when a heavy liquid, such as water, is carefully poured into a bottle containing a lighter one, like petroleum, the bottom of the vessel always holding a certain quantity, which gradually "drops up" to the surface.

The size of a drop generally depends on, and is influenced by at least four conditions:—1. The self-attraction of the drop-generating liquid. 2. Its adhesion to the matter on which the drop is formed. 3. The shape of this matter. 4. The physical relations existing between the matter on which the drop is formed, the liquid constituting the drop itself, and the medium through which it passes.

Denoting the three states of matter by the letters S (solid), L (liquid), and G (gaseous), and considering the symbols in the order in which they are written to denote respectively the matter from which the dropping takes place, the drop and the medium, we get a convenient notation. There are eight variations of these conditions, but only three of them are possible.

S L L, when from a solid a liquid drops through a liquid.

S L G, when from a solid a liquid drops through a gas.

L L L, when from a liquid a liquid drops through a liquid.

Of these three cases the first and last may be reversed,—as when from a solid a liquid *ascends* through a liquid; and when from a liquid a liquid *ascends* through a liquid. The middle case, of course, cannot be reversed as it would presuppose the existence of a liquid lighter than a gas.

The case S L G is the most common and important, and is the only one at present investigated by Professor Guthrie. In this case the variable conditions are the self-attraction and cohesion of the liquid, which is dependent on its chemical and physical constitution; the adhesion between the solid and the liquid, which is dependent on their relative chemical and physical constitution, and the shape of the solid. Temperature has also a considerable effect on the solid liquid and gas. There are also two other conditions,—the adhesion of the gas to the solid and to the liquid; but as atmospheric air at ordinary barometric pressure is always the gaseous medium through which the drop falls, these need not be noticed. The condition, however, which has the greatest effect on the size of the drop is the interval which takes place between the successive drops, and called by Professor Guthrie the *growth-time*. *Ceteris paribus*, therefore we may say that the growth-time being constant, the size of the drops produced will be the same for the same liquid.

In the first series of experiments Professor Guthrie used an ivory sphere having a diameter of 22.1 millimetres, and suspended from a retort stand by three fine wires. The sphere was dipped in hydrochloric acid so as to deaden its surface. The liquid under experiment was contained in a cylindrical vessel, and always kept at the same level by means of a pear-shaped reservoir, containing the same liquid, suspended over it with the mouth just touching the surface. The liquid was conveyed to the ivory ball, the upper half of which was covered with cotton wool, by a syphon which could be easily raised or lowered at pleasure, so as to regulate exactly the amount of liquid flowing on to the ball. The end of the syphon was slightly turned up, and touched a plug of cotton on the top of the sphere. The drops formed were received in a funnel placed in a beaker.

Cocoa-nut oil was the liquid used in the first series of experi-

ments which had for their object the determination of how far the rapidity of dropping influenced the size of the drops, and to establish the fact of the uniformity between the size of drops falling at equal intervals of time. The temperature being at 28°.5 C, the flow of liquid was so regulated that a second elapsed between the fall of each drop. Eight batches of sixty drops each were then weighed accurately, and were found to have a mean weight of 8.9767 grammes, the variation between the extremes being insignificant. Thirty batches of sixty drops each were then prepared, the growth-time being varied six times in the course of the experiments, and ranging between 0.435 to 0.767 of a second. In this series of experiments some curious irregularities occur which have been confirmed by other experiments. The following table will show this :—

GROWTH-TIME.	MEAN DROP-WEIGHT.	GROWTH-TIME.	MEAN DROP-WEIGHT.
Seconds.	Grammes.	Seconds.	Grammes.
0.433	0.07540	0.633	0.07281
0.500	0.07275	0.700	0.07059
0.567	0.07456	0.767	0.06912

It will be seen that the weight of a drop formed in 0.500 of a second is less than those falling either in 0.567 of a second, or 0.633 of a second, although the law appears to be at first sight that the weight of a drop should diminish as its growth-time increases. In order to endeavor to establish some law with respect to these discrepancies, Professor Guthrie undertook a long series of experiments: the growth-time of the drops varying from the third of a second to twelve seconds, with the following result :—

From 0"·333 growth-time to 0"·433 there is diminution.

" 0"·433 " " 0"·450 " increase.
 " 0"·450 " " 0"·467 " diminution.
 " 0"·467 " " 0"·500 " increase.
 " 0"·500 " " 12"·000 " continual dimin.

On the whole, the law seems to be that the slower the dropping, the smaller the drop. It was found too, that when the time between the drops was decreased to below 0.333, a continuous stream was the result. This first fact is most interesting to the pharmacist, as showing the influence of rate in dispensing

drops. For a growth-time, 0.333, we get a drop weighing 0.09264 grammes, while for a growth-time of $1\frac{1}{2}$ seconds, we get a drop of only two-thirds the weight. A pharmacist who dispenses 100 drops of a liquid at the rate of three drops a second, will give half as much again as another who measures the same liquid at the rate of a drop every second and a half.

One peculiar fact that appeared during these investigations, was that when the drops changed to a stream, from the supply of liquid being increased, the amount of oil having decreased in quantity, or in other words, a fine stream delivered less in a given time, than a series of large drops.

It also appears that there is no such thing as a normal drop, for at no degree of slowness in dropping do the drops assume a size unaffected by a slight change in the rate of their sequence. Professor Guthrie has also tried the effects of gradually decreasing the strength of saline solutions dropping at the rate of two seconds, and found that *decrease in solid constituent produced precisely the same effect upon the size of the drop as decrease in the growth-rate in the drops of a homogeneous liquid*, the same apparently abnormal maxima and minima presenting themselves.

In a theoretical point of view, these peculiar relations have the greatest importance, and will materially assist in determining the relation between a dissolved solid and its solvent. The secondary maxima and minima in the case of the chloride of calcium solution, may result from the formation of definite hydrates. Professor Guthrie does not give the exact amount of solid matter in the chloride of calcium solutions used, but only uses a nearly saturated solution, and dilutes it with twice 4, 8, 16, 32, &c., times its bulk of water. Had he given us equivalent solutions it would have been most interesting.

These experiments remind us in principle of those of Mr. Graham, in transpiration of fluids, or the passage of fluids through capillary tubes. Here similar apparent discrepancies occurred, but they were cleared up by the discovery that the definite hydrates always exerted a peculiar influence in retarding or accelerating the flow. In both cases friction of a fluid against a solid takes place, which friction is diminished or increased primarily, according to the amount of solid matter in

the solution, and secondarily by that solid matter being in a state of mechanical or chemical union with its solvent. We should strongly recommend Professor Guthrie to experiment on solutions of the acids, and see the effect of their definite hydrates in altering the size of drops. According to Graham, nitric acid, with three equivalents of water, is found to have a lower rate of transpiration than when diluted more or less. With sulphuric acid, the maximum occurs with the monohydrate, with acetic acid, the byhydrate with hydrochloric acid, the dodecahydrate and so on. The determination of the relations, too, between the drop-size, and the boiling points, and composition of the alcohols, ethers, &c., would be most interesting. The influence of temperature also needs inquiring into, in fact, there is an enormous and evidently most fruitful field open to Professor Guthrie's talents and patience, of both of which the present paper has given us so high an opinion.—*Chemist and Druggist.*

ACTION OF LIGHT ON SANTONINE.—PHOTO-SANTONIC ACID.

By M. SESTINI.

Santonine, it is well known, is colored yellow by exposure to solar light, and this takes place in a vacuum as well as in the air. It does not take place, however, when the actinic rays are cut off by means of a solution of nitrate of uranium.

Crystals of santonine reduced to powder and then exposed to light, not only change color, but evolve a resinous odor, and acquire a very bitter taste. Water added to this changed santonine acquires a yellow color, presents an acid reaction, and has a bitter taste. On distillation the same water yields an acid liquid, which reduces nitrate of silver and bichloride of mercury, and precipitates acetate of lead white. The author concluded that the volatile matter formed during the coloration of santonine by light was formic acid. On evaporation to dryness the distillate gives a deep red-colored resinous residue.

By treatment with water the colored santonine almost entirely lost its odor. On treatment with alcohol, it now in great part

dissolved, giving a yellowish solution, which, on evaporation, left a reddish-yellow residue, the greater part of which was soluble in ether. The etherial solution left an uncrystallizable residue of an amber color, and with a very bitter taste.

In subsequent experiments made by exposing santonine to light under water from which all air had been carefully expelled, the author obtained exactly the same results, and hence concluded that by exposure to solar light, santonine is changed into formic acid, and an uncrystallizable substance much more soluble in alcohol and ether than santonine itself, and also a red resinous substance. To the yellow uncrystallizable substance he has given provisionally the name *photo-santonic acid*.

The acid, on analysis, gave results which agree very nearly with the formula $C_{22}H_{14}O_4$. Its chemical properties will be described in a future memoir.—*Lond. Chem. News*, from *Bul. de la Société de Paris*, July, 1864.

A NEW METHOD OF ESTIMATING SULPHURIC ETHER.

By MM. REGNAULD and ADRIAN.

The purity of ether is commercially estimated by its density, but this is not a rigorous mode of determination, since it is disputed what instrument is to be used. There is also the incorrectness in the graduation of commercial instruments, and, moreover, the temperature is not taken into account.

Some degree of regularity is attained by using a gravimeter, but by itself this determination is insufficient, since the ether is mixed at the same time with water and alcohol in variable proportions.

The first step towards obtaining a correct estimate is to simplify the nature of this complex product.

Having ascertained that carbonate of potassa completely dehydrated ether, the authors found that the same salt brought alcohol mixed with the ether to 98° centesimal without going beyond.

These points established, they base their process on the estimation of the degree of purity of ether by determining its density before and after the action of dry carbonate of potash. They

have arranged a table so as to dispense with calculation. The proportions of pure ether, alcohol and water contained in any ether can be determined by two gravimetric experiments.

Note.—The temperature for the two experiments should be kept rigorously at + 15°, and the shaking of the mixture with the dry carbonate of potash, which is effected in a stopped flask, should last from twenty-five to thirty minutes.—*Lon. Chemical News*, from *Bulletin de la Société Chimique*, vi. 461, 64.

ABSTRACTS OF PAPERS READ AT THE LATE MEETING
OF THE BRITISH PHARMACEUTICAL CONFERENCE,

Held at Bath, England, Sept. 14, 1864.

ON THE EXTRACTION AND PRESERVATION OF AROMATA. BY C. R. C. TICH-BORNE, F. C. S., CHEMIST TO THE APOTHECARIES' HALL OF IRELAND.

Observing the preservative powers of glycerin for vegetable substances, the author packed different kinds of scented flowers in jars, and covered them with glycerin. In this way he had kept some for two years. If flowers, &c., so preserved be pressed, it is found that the glycerin has absorbed all the volatile oil, and when diluted and distilled furnishes a water in all cases superior to that from flowers preserved by salt. If the odoriferous glycerin be diluted and agitated with oils or fat, ointments, &c., of excellent quality are produced. In all these cases the glycerin is recovered by mere evaporation of water from it. The delicate oils of orange, jasmine, heliotrope, etc., are best isolated by steeping the flowers in the glycerin, pressing, and again steeping more flowers, and so on; finally diluting with water and shaking with chloroform, which removes the oil. The low-boiling point of the chloroform admits of its being separated from the oil by a temperature which does not injure the oil.

ON THE PHARMACEUTICAL APPLICATION OF GLYCERIN. BY MR. F. BADEN BENGER.

In this paper a short history was given, and a *résumé* of its applications in Pharmacy. The preparations known as "plasma," in which glycerin with starch is substituted for lard, as a basis of ointments, had been made the special subject of experiment.

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by the author. He had found *tous-les-mois* starch superior to any other in making the simple plasma. Fifty grains of *tous-les-mois* were to be rubbed with one ounce of glycerin, and the mixture heated to 240° for a few minutes or till it became translucent. He thought that plasma might replace lard in ointments having a tendency to become rancid, but its relatively great expense would preclude its general adoption. The glyceroles, or solutions of different substances in glycerin, were then noticed. A good "tincture of myrrh and borax" could be made by dissolving one part of borax in two of glycerin, and adding tincture of myrrh. As substitutes for syrup, the glyceroles did not appear to possess any superiority. Its use as an excipient in pill-making was strongly advocated.

ON THE APPLICATION OF DIALYSIS IN DETERMINING THE NATURE OF THE CRYSTALLINE CONSTITUENTS OF PLANTS. BY J. ATTFIELD, PH.D., F. C. S.

The author had dialysed a few plant-juices, the first that came to hand, and from each had obtained some of the crystalline constituents. The tops of the common potato yielded a crop of nitrate of potash, some cubes of chloride of potassium, hexagonal crystal not analysed, sugar, and an ammonia salt. The deadly nightshade gave nitrate of potash, an unknown magnesia salt in square prisms, sugar, etc. Pea-pods yielded only sugar. The common garden lettuce contained nitrate of potash, tetrahedra of undetermined composition, sugar and ammonia. Cucumbers furnished sugar, ammonia and sulphate of lime. The cabbage also furnished sulphate of lime and ammonia. Stramonium contained so much nitrate of potash, that dried portions quite deflagrated on being ignited.

From these experiments the author thought the proposed application of dialysis promised to be of great service, directly and indirectly, in investigating vegetable physiology.

ON THE PURITY OF FOREIGN IODIDE OF POTASSIUM. BY F. C CLAYTON.

The high price and large consumption of this article has made it one which the manufacturer has special temptations to adulterate. Of late years very large quantities of foreign make have found their way into our markets, giving rise to keen competition, which, in the case of drugs, is often far from improving their quality. From these considerations we might

still expect to find much that is impure, but the results detailed below lead us to a different conclusion. The impurities of iodide of potassium are bromide and chloride of potassium, and sulphate, iodate, and carbonate of potash. Moisture in excess is also to be considered an impurity, for, besides giving the sample a greater liability to deliquesce, it shows an article of imperfect manufacture. The first-mentioned adulterant, though it has at times been frequently used, has in none of the fifteen samples experimented upon been found, and the second only in quantities from 3.7 per cent. down to minute traces. Sulphate was never found in ponderable quantities, and iodate in only 3, all of which, however, were of foreign manufacture. (Several English samples were analysed for the sake of comparison.) In these three cases it never amounted to 1 per cent. Carbonate, though more generally present, never amounted to 1 per cent., generally much under this. From these results, it will be seen that the iodide of potassium now in the market is practically pure, the percentage in all the samples being over 95°.

ON A TEST FOR METHYLIC ALCOHOL IN PRESENCE OF ETHYLIC ALCOHOL, WITH
REMARKS ON METHYLATED SPIRIT. BY MR. JOHN TUCK.

After referring to the value of methylated spirit and the composition of wood naphtha, the author stated it to be his opinion, that wood naphtha, once mixed with spirit of wine, could not be again separated; and that, though the characteristic odor of methylated spirit could be removed, yet the process required such cumbersome apparatus, that its use would certainly be followed by official detection. Seeing, however, that the illegal process might possibly be employed, and the revenue be thus defrauded, and the inodorus methylated spirit be used in Pharmacy and in concocting liqueurs, he had searched for a test, whereby even the deodorized naphtha could be detected, when mixed with spirit of wine. Such a test he had found in an alkaline solution of the double iodide of potassium and mercury. On boiling a few drops of this with pure spirit of wine, a yellowish-white precipitate was formed; but when methylic alcohol was present, no such precipitate occurred. Details of the application of the test were then given. In testing flavored spirits, tinctures, etc., it would probably be desirable to distil the suspected liquid,

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and apply the test to the distillate. The author added that, since completing the paper, he had found that acetone was the principle which prevented the formation of a precipitate by methylated spirit.

ON THE PURITY OF SULPHATE OF QUININE OF COMMERCE.
BY MR. W. WALTER STODDART.

"The author's experiments showed that quinine, and not cinchonine, must be generally sought for as the chief impurity in commercial sulphate of quinine. After pointing out the objections to the tests of Bouchardat and Pasteur, Stokes, Herapath, Brande and Pelletier, Mr. Stoddart proposed a modification of Liebig's, and gave the details of its application. A second trustworthy and ready test, for all possessing microscopes, was sulphocyanide of potassium. If a drop of a solution of the latter salt were added to a drop of saturated and neutral solution of the suspected quinine, and the mixture observed by the microscope crystals of sulphocyanide of quinidine and sulphocyanide of cinchonine, both of highly characteristic form and wholly distinct from the sulphocyanide of quinidine formed at the same time, would be observed if either quinidine or cinchonine were present. For quantitative determination, the Reporter employed De Vry's iodide of potassium reaction, and detailed the results of his analyses of samples of sulphate of quinine from Messrs. Howards & Sons, De Lisle & Co. (Pelletiers), Mr. J. Hulle, Messrs. Herring & Co., and a German specimen. It was, he said, gratifying to be able to affirm that sulphate of quinine, if purchased in bottles or sealed packets, as sent out by the makers or obtained through well known wholesale houses, is commercially pure and quite fit for medicinal use. It was the chemist's own fault if he were not supplied with an article of sufficient purity."—*Proc. Brit. Pharm. Conf.* 1864.

ON THE RANCIDITY OF FATS. BY T. B. GROVES, F.R.C.S.

The author states the occasion of his paper to have been the observation of the preservative effect of aromatic oils on oxide of mercury ointment, which induced him to compare the relative efficacy of the various essential oils of commerce, both as regards mixed ointments and the pure fats.

After general remarks on the process of rancidification, and the theories that have been imagined to account for it, he proceeded to consider the possibility of applying remedial measures of a radical character, which he decided in the negative. The experiments on variously-prepared specimens of lard, aromatized and non-aromatized, were then detailed, and the conclusion arrived at that creasote, oil of pimento, oil of cloves, and balsam of Peru, were capable of greatly retarding, if not of altogether preventing oxidation. A comparison of the effect of these aromata in preserving these aqueous solutions of albumen, gave countenance to the theory of the cause of rancidity of fats being the disturbance effected by a ferment of the albuminous order. He concluded, by strongly urging the necessity of using for the preparation of ointments, especially those containing metallic oxides, materials retaining unaltered the odorous principles with which nature has endowed them, and suggested the advisability of adding to lard and other inodorous fats, small proportions of oil of pimento, to render them more permanent; to effect which, two drops to the ounce had been found sufficient.

SUGGESTIONS CONCERNING ACCIDENTAL POISONING.

The Members of the British Pharmaceutical Conference have had under deliberation the subject of the prevention of accidental poisoning. The result has been to convince them that most qualified dispensers of medicine already adopt precautions to this end, and they consider that the comparative rareness of mistakes shows that such safeguards are generally attended with success. It being desirable, however, that some approach to uniformity of practice should exist, the following suggestions are offered:—

1. It is recommended that all who are, or expect to be, engaged in the practice of Pharmacy, should take advantage of existing facilities for acquiring a good theoretical as well as practical knowledge of their business, as being the best foundation that can be laid for future safety, as well as usefulness, in their calling.
2. It is desirable that, where practicable, a separate and suitable part of the shop of a chemist and druggist should be set apart for the dispensing of prescriptions.

3. In the dispensing department, or other suitable place, there should be a *repertorium toxicorum*, or "poison cupboard," under lock and key, in which should be kept all the concentrated and virulent poisons. An additional protection of similar character consists in securing the stopper of a bottle by tying over or other means.

4. It is advantageous that labels on shop bottles should be visible at a glance; the words being, for instance, in two short lines, on a square label, rather than in one line on a long curved label.

5. Where practicable, every prescription should be checked by a second person before it leaves the shop.

6. It is expedient that liniments, lotions, and poisonous preparations for external use, should be sent out in such a form as to be easily distinguished, by touch as well as sight, from medicines intended for internal administration.

7. Every specially dangerous substance sold by the chemist and druggist should, in addition to its name, be distinctly labelled "Poison;" except in the case of medicines dispensed from a prescription, where the statement of the use or dose may be considered to be sufficient precaution. A label having the word "Poison" in white letters on a black ground is well adapted for the above purpose."

ON COMMERCIAL PHOSPHORIC ACID. BY R. PARKINSON, PH.D.

Twenty-eight samples had been examined with reference to their strength and freedom from impurity, the result as to strength being that three samples came up to the British Pharmacopœia strength; five more were about the London Pharmacopœia strength; while the remainder were of various shades of declension. Phosphate of ammonia was present in six samples, sulphuric acid in one, nitric acid only traces in any. The presence of ammonia was considered evidence that the samples containing it had been made from the glacial acid, which, commercially, is made by heating the phosphate of ammonia, the whole of the ammonia never being practically got rid of. One sample of German glacial contained 5 per cent. of ammonia, which is equal to 17½ per cent. of tribasic phosphate of ammonia. If a pure glacial acid could be readily obtained commer-

cially, that was suggested as the safest and best means of obtaining the dilute acid; and the combustion of phosphorus, with arrangements for the supply of air and collection of acid, was suggested as the best mode of obtaining such a pure glacial acid. Other plans for its preparation, which were detailed, had been tried, and found unsatisfactory.

ON THE ASSAY OF THE ALKALOIDS IN MEDICINAL EXTRACTS.

BY T. B. GROVES, F.C.S.

The object of the author was to devise a process for estimating the strength of the vegetable extracts used in medicine. The method he employed was a volumetric one. Mayer, of New York, and Valser, of Paris, had worked upon the same subject, and all three had fixed upon the same liquid for precipitating the alkaloid; namely, the iodo-hydargyrate of potassium. All three also had suggested formulæ for the precipitate. Valser's experiments corroborated those of the author, while Mayer's pointed to a different conclusion. Mayer's experiments were then reviewed, and the details of some reactions given from which it seems that, on adding the iodo-hydargyrate to the solution of the alkaloid, a point was arrived at when the addition of either liquid caused a precipitate. In this way some of the apparent anomalies might be explained. If, however, time were allowed for the completion of the reaction, more definite results might be obtained. He described the reactions with strychnia, quinine, cinchonine, morphia, nicotina, and codeia, and reviewed Mayer's results, which were quite, he said, anomalous. In estimating the amount of alkaloid in an extract, the alkaloid must first be isolated as far as possible, by Stas's well known method. In estimating the medicinal value of an extract, more exact methods than those now known must be discovered before accuracy can be attained.

ON THE PREPARATION OF AN IMPROVED WINE OF IRON.

BY H. N. DRAPER, F.C.S., AND MR. J. WHITLA.

The authors first described their observations of the action of light in promoting decomposition of the officinal wine of iron. To prevent this decomposition, which occurs even in the dark, they suggested that ammonia-citrate of iron should replace potassio-tartrate, and that citrate of ammonia should also be

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added to prevent any slight precipitation that might otherwise occur when the wine was exposed to strong sunlight. The formula proposed was as follows:—

Ammonia-citrate of Iron	160 grains.
Crystalline Citrate of Ammonia . . .	60 "
Sherry	1 pint.

The wine thus prepared was perfectly transparent, and had no disagreeable taste.—*London Pharm. Jour.* for October.

ON THE DETERMINATION OF WATER IN ORGANIC SUBSTANCES.

By M. CL. WINCKLER.

This determination is founded on the change of color, which anhydrous chloride of cobalt undergoes in absorbing water. Dry chloride of cobalt dissolves in alcohol of a density of 0.792, preserving a beautiful blue color. Hydrated bodies, in presence of this solution, abandon their water, and the color turns to red. The operation is begun by titrating the solution of cobalt, to ascertain the quantity of it which must be added to a certain amount of water to produce a fixed color. In this way the author has determined the alcoholic strength of mixtures of alcohol and water. *London Chemical News*, from *Bulletin de la Société Chimique*, vi. 460, 64.

ON THE SOLUBILITY OF GOLD IN NITRIC AND SULPHURIC ACIDS.

To the Editor of the Chemical News.

SIR,—Since sending you the note on the solubility of gold, a chemist of my acquaintance has informed me that the information given was not sufficient to enable him to perform the experiment satisfactorily. I therefore send you a more complete account of the experiment performed by me.

The alloy of silver and gold was exposed to the action of nitric acid until the gold was left in a powder. On heating this powder with sulphuric acid a yellow solution was obtained, which, when poured into water, gave a purple precipitate. This at first led me to suppose that the sulphuric acid had dissolved

some gold; so after washing, the gold was heated for some time with strong sulphuric acid, without any solution taking place; but on adding a little nitric acid an immediate yellow color was observed in the liquid, and on pouring it into water the same blue precipitate was obtained. The experiment has been repeated, and the acids were of course tested to ascertain their purity; but the solution contains the gold evidently in a different state of combination from that produced by dissolving in nitric and hydrochloric acids, for it is again precipitated by water.

A tenth of a grain was easily dissolved in this manner; but had the heat been continued no doubt a larger quantity would have been obtained in solution. I am, &c.,

ARTHUR REYNOLDS.

—*Chem. News*, Oct. 1, 1864.

Abstract of the Minutes of the Philadelphia College of Pharmacy.

At a stated semi-annual meeting of the Philadelphia College of Pharmacy, held at their Hall, on Monday evening, September 26th, 1864. Present 19 members.

In the absence of the President, 1st Vice-President, Samuel F. Troth, occupied the chair, and William C. Bakes was appointed Secretary *pro tem.* The minutes of the annual meeting were read and adopted. The minutes of the Board of Trustees were read, informing the College that the valuable cabinet of specimens of *Materia Medica*, formerly owned by the late Professor of *Materia Medica*, Dr. R. P. Thomas, was purchased by voluntary subscription among the friends of the deceased and the members of the College generally, and presented to the College as a memento of the zeal and industry of our late fellow member; also that Mr. Edward Parrish was unanimously elected to fill the vacant Professorship of *Materia Medica* in the School of Pharmacy, and that the following gentlemen have been elected members of the College, William H. Githens, Richard M. Shoemaker, Frederick Brown, Edwin Tomlinson, and Albert E. Ebert associate member. Professor Procter gave a very interesting account of the recent meeting of the American Pharmaceutical Association at Cincinnati, and stated that sixty new members had been received and an unusual number of original papers had been read and referred for publication. The Association adjourned to meet in Boston.

Mr. S. S. Garrigues, having removed from the city, tendered his resignation as a member of the College, which was accepted, and, on motion, he was permitted to retain his certificate.

Mr. Samuel F. Troth, in response to an invitation from the late annual meeting, read a paper on the early history of the College, prefacing it by an interesting account of Pharmacy, as practiced in this city before the establishment of the School of Pharmacy. On motion this valuable paper was referred to the Publishing Committee, and a vote of thanks was tendered Mr. Troth. It was, on motion, resolved that Messrs. Charles Ellis and Dillwyn Parrish be requested to prepare an additional paper recognizing the zeal and fidelity manifested by the late Henry Troth, during the early existence of the College. The resignation of Mr. Edward Parrish, as Recording Secretary of the College, was read and accepted, and a vote of thanks was ordered for the faithful and efficient services rendered.

The semi-annual election for Trustees, &c., was now ordered, Messrs. Jacob L. Smith and S. S. Bunting acting as tellers, who reported the following as elected:

Recording Secretary, Charles Bullock.

Trustees.

Dr. W. H. Pile,	George J. Scattergood,
W. J. Jenks,	A. B. Taylor,
Evan T. Ellis,	J. C. Savery,
Edward Parrish,	W. C. Bakes.

Committee on Deceased Members.

Edward Parrish, William Procter, Jr., Charles Bullock.
On motion the College adjourned.

WILLIAM C. BAKES, *Secretary pro tem.*

Editorial Department.

BRITISH PHARMACEUTICAL CONFERENCE.—This body met, according to adjournment, in the city of Bath, on the 14th of September last. The Minutes of the Meeting are published in the October number of the *Pharmaceutical Journal*, and are interspersed with short abstracts of the papers read upon that occasion, a number of which we have reprinted in this Journal at pages 529 to 536. The number of members present was not large, but among them were some of the most prominent pharmacists of England. The reading of each paper was followed by a discussion of its merits. It is to be presumed that the papers in full will be published in some form, either as a distinct annual or in the *Pharmaceutical Journal*, as the abstracts are too brief to convey a clear idea of the papers read. Much discussion arose in regard to the subject of the sale of poisons on the reception of a report on that subject.

The meeting was presided over by Mr. Henry Deane, of London, who devoted a portion of his address to the subject of the then recent trial at Liverpool, in which Messrs. Clay and Abrahams were compelled, by the construing of Lord Campbell's act, to pay heavy damages (£1500) to the family of a man whose death was occasioned by a dose of poison inadvertently dispensed from their establishment. This unrighteous verdict has produced much feeling in pharmaceutical circles in England. We have elsewhere given an account of this case, (see pages 502 and 510), and may appropriately here quote from the address of President Deane his remarks bearing upon the liability of pharmacists.

"The next subject I have to refer to is one the importance of which to us, as responsible persons in the sale and dispensing of medicines, it is scarcely possible to overestimate.

"The result of the trials on the late case, the acquittal of the assistant, who is supposed to have dispensed the medicine, from the charge of manslaughter, on the score of its being a pure misadventure, and the unavoidable compromise with the friends of the deceased, show that every one of us is standing on a mine which may at any moment explode, and send us to pecuniary perdition and despair. It matters nothing what amount of care and expense has been bestowed on arrangements to secure the public from accident; it matters not that the proprietor of an establishment is in no way to blame, or that the patient has died through a pure misadventure, the law requires that a jury shall award compensating damages to the injured family. We all know what that means to nineteen in twenty of those following the business—it means utter ruin.

"Allow me to state our case and position in society as an important branch of what is called a liberal profession. In the first place—

"All the responsibilities of professional men are laid upon chemists without either the dignity or emolument. We are treated as shopkeepers, with profits less than those of an ironmonger.

"Rich and poor of all grades do not hesitate to consult them in all sorts of difficulties, and obtain freely and gratuitously that for which a physician or consulting chemist would charge a handsome fee.

"That the information thus freely accorded to all is truly valuable is proved by the fact of the constancy of the practice, and the needless jealousy of many professional men.

"To obtain this amount of public confidence, a large expenditure of means, careful observation, energy, study, and integrity of purpose are required.

"The more extensive the business of a chemist, the greater the responsibility; but not so the profits.

"When the public confidence is secured, it is the interest of the chemist to maintain it by all and every means in his power.

"Foremost amongst the means are the obtaining good assistants, and making such arrangements in the establishment as shall, as far as practicable, obviate all chances of accident, and ensure the detection of errors, and the sources of them. Having done this, and exercising constant watchfulness, all that a man can do has been done. Proof of successful care is shown in the small number of known errors made by dispensing chemists.

"Thus, a man may dispense 50 prescriptions daily, on an average of 300 days in a year, equal to 15,000 prescriptions, each of which will average

10 doses, or 150,000 doses annually! He goes on thus for many years, and never has the faintest trace of an accident arising from any fault or oversight of his own, and for which he rarely gets a fair share of credit. But during those years he has probably corrected numberless errors of prescribers, many of them of no trivial nature; but for this he has no credit, professional etiquette requires he should be silent. If the skill and foresight of the dispenser were not habitually turned to such contingencies, serious accidents would frequently be recorded. Hence, the educated and careful dispenser, in the exercise of his skill, tact, and judgment, in avoiding the dangers incidental to his grave and responsible duties, is a benefactor to the community, and deserves better pay and higher consideration than the world is disposed to give. Yet a man, though gifted with clear intellect and sound discretion, and possessing a thorough knowledge of his business or profession, cannot after all claim exemption from that common imperfection of humanity—fallibility, and is not a bit less liable to error than the professedly more highly educated man who writes prescriptions, or the patient who carelessly takes up an opium liniment, and swallows it for a black draught, without exercising that common sense which we may safely state is the only true preventive of such accidents.

"No regulations could be devised nor act of Parliament enforced to prevent a physician from making a wrong mark, which might lead to fatal results, nor prevent the recurrence of such facts as the following:

"A lady of our acquaintance lately took into her hand an oval, fluted, half-pint bottle of chloride of zinc, having thereon a large red label, and 'Poison,' in large red letters, on the top of the bottle, and took a dose therefrom, instead of from a round pint bottle, having a small plain label, which she had used for two years for a soothing syrup in daily and frequent use.

"Another lady of our acquaintance went to a cupboard where medicines are kept on a middle shelf to procure a dose of fluid magnesia, but instead of taking the proper bottle standing before her face, got a chair and took a bottle of chloride of zinc from a distant corner of a top shelf, and, in spite of the red label and the word 'Poison,' took a dose, which killed her in a week.

"Such cases can be quoted by the dozen, together with numberless little inexplicable instances in daily life, of temporary absence of common sense, which serve to prove the frailty of human nature, and how powerless all rules and regulations must be to prevent their recurrence entirely.

"The case at Liverpool brings all these considerations before us in the most vivid manner. . . . Is a man to suffer destructive and ruinous spoilage because his assistant is not more than human? It is monstrous injustice. Who is safe amongst us if a ruinous prosecution is to follow an accident, however sad and fatal it may be, which may any day occur to any one of us—a class of men proverbially and necessarily careful for their own existence' sake? And who will enter a profession liable to such fatal responsibility?

"A general practitioner may, and does make numberless mistakes with impunity, because the facts are confined to himself and his own surgery. The eyes of the physician and the public are not on him or his dispenser, to stimulate to vigilance and care; thus few accidents under such circumstances ever see the light, and perhaps it is well it should be so. But cases do occasionally come before the public which contrast most favorably for the order and care exercised in every well regulated pharmacy."

The Editor of the *Chemical News*, in speaking of the meeting, says:—

"The Meeting of the Pharmaceutical Conference at Bath may be considered a decided success. A large gathering of chemists and druggists can never be expected; but we have no doubt the proceedings of the Bath meeting will conduce to the attendance of larger numbers at meetings yet to come. The abstracts of the papers we have published show that the attention of members was for the most part directed to practical matters on which they furnished sound and useful information."

We cannot but view this Association in a very favorable light, believing that it may be so conducted as to bring out a large amount of talent now latent in the British Pharmaceutical body, and tend to elevate the status of that numerous class now known as chemists and druggists. To be successful, the leading spirits will have to guard it from a tendency to learned exclusivism and titular pride; its action must be as far as possible democratic, and based on the broad principle of encouragement to merit in every class with the unremitting object of improving the actual practice of Pharmacy in every shire and town in the British Islands.

MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—We have devoted a large space to the Proceedings of the late Meeting of the Association, believing that the general interest existing among our subscribers will render an account of its doings acceptable. Owing to the custom of the Association of publishing its own Proceedings, we are debarred from offering any of the numerous papers that were read, until they have been printed, so that our readers will have to wait till January, at least, for a sight of them. Between twenty and thirty original articles were read, besides the Reports. The number of queries for 1865 is only seventeen, exclusive of those extended over from last year, and it will be desirable to encourage the production of volunteer papers for the Meeting at Boston, to render it an approach to the success of the Meeting of 1859, held in that city. During the last few years, New England pharmacists have not contributed much to the Proceedings, and in view of the Meeting being in Boston next year, we would respectfully suggest to that important part of our membership that they make an earnest effort to find the time, as we know they have the talent, to contribute a full share and over running to the interest of the Meeting in September next. The mantle of the lamented Carney should have fallen on some of his associates; perhaps it has, and that we shall learn on whom when we meet again. In recurring to the Meeting at Cincinnati, we believe the full action of the Association was curtailed by an early adjournment to make the excursion to Mill Creek Valley. The reading of important papers had to be omitted, and entrusted to a committee to decide on their suitability for publication. This course arose from the past experience of the members, that when the sessions are interrupted by pleasure-seeking, it has never been possible to get a full session afterwards. Let us, therefore, in future endeavor so to arrange the programme that we may not only enjoy social intercourse and

examine interesting objects at the place of meeting, but fully digest the business that calls us together before parting for our homes. But we cannot pass from the subject without expressing the great gratification which, in common with a large number of other Members, we derived from the excursion to Mill Creek Valley, and the noble Institution for the Insane under the care of Dr. O. M. Langdon, as referred to by the resolution at page 494. The autumnal tinting of the foliage had progressed sufficiently to add its peculiar beauty to the landscape, whilst the succession of beautiful villas and cottages, which decorated every prominent point, added much to the interest of the varying scene. The principal cemetery of Cincinnati was passed on the route, but time did not permit the excursionists to enter its gate and avenues, although such had been part of the programme. Many thanks to the Cincinnati College for the pleasant reminiscences that cling to this episode of the meeting.

Therapeutics and Materia Medica; a systematic treatise on the action and uses of medicinal agents, including their description and history. By ALFRED STILLE, M. D., Professor of the theory and practice of medicine in the University of Pennsylvania, &c., &c., &c. Second edition, revised and enlarged, in two volumes. Philadelphia, Blanchard and Lea, 1864, pp. 1595, octavo.

In March, 1860, on the appearance of the first edition of this work, we gave the result of an examination of its pages. In again looking over this new edition, we find no alterations in the plan of the work, or in the details of its execution, which cause us to change the opinion then arrived at, that it is mainly therapeutical as a treatise, and that Materia Medica and Pharmacy are dwelt upon only so far as will give the student and practitioner a general idea of the sources, characters and history of drugs, and a bird's eye view of the pharmaceutical preparations. Yet in each of these departments there are some exceptions where the author has entered more fully either into their history or pharmacy than comports with the general plan. The arrangement of the work is therapeutical, and its great value consists in its thoroughness as an exposition of the present state of this important branch of medicine. The author differs in his manner of treating the subject from many, carefully bringing out the views of the observers and authors whose works he consults, whilst his own views are kept so out of sight that it is not easy to obtain his own opinion of the value of a medicine. Where a favorable opinion of the ability of an author is held, it is satisfactory to know just what he thinks of, or what is his estimate of the curative power of a drug based upon his own observation and experience of facts which are patent to his own practice. Should Dr. Stillé give a little more prominence to his own results and opinions in future editions, we doubt not his readers will be increasingly satisfied with his valuable pages.

Leaving for the medical journals the therapeutical part of these books, we have hastily glanced over the pages in view of their pharmacological

contents. *Elaterium* and *Podophyllum*, which appear to have been overlooked in the first edition, are noticed in this, and also several new medicines, as cotton root, oxalate of cerium, zatze, saoria, ol. cadimum, etc. The position of some others is changed; *Kamela* is retained under that name, whilst in the new edition of the *Pharmacopœia* it is called *Rottlera*, from the generic name of the plant yielding it. *Lobelina*, at page 280, vol. II., is described as "a clear volatile liquid." Our own experience with that alkaloid suggests its nonvolatility, being susceptible of ready destruction by an attempt to volatilize it. At page 170, second line from the bottom, vol. I., the word sulphuric should read sulphurous. Some singular errors have crept into the pharmaceutical articles. For instance—at vol. II., page 593, the fluid extract of dandelion is said to be made by exhausting sixteen troy ounces of dandelion by alcohol, and the tincture reduced to half a pint by evaporation! This would produce a very different preparation from that of the U. S. P. Fluid extract of buchu is said to be made with diluted alcohol, when only strong alcohol is directed. In several instances it is observed that recent discoveries are not noticed, which may, in part, be due to the author not having met with a notice of them in time for his revision. The alkaloids *ecbolina* and *ergotina*, discovered by Wm. T. Wenzell, and published originally in the *American Journal of Pharmacy*, in May last, and noticed in *Hay's Journal* for July, are not noticed, nor is any reference had to *propylamina* as a constituent. These instances are sufficient to show that a little more care in the pharmaceutical portion of the work would benefit it in the next revision, whilst there is so much that is unexceptionable that, unless looked for especially, these imperfections may be passed over unobserved. We believe it to be worth the labor it will require if the third edition, when it is called for, is rendered more full in regard to the proximate chemical composition of drugs, and the characters of the proximate principles which give them activity. It may be done without materially increasing the size of the book, and would certainly enhance its value. With these few remarks, all that the short period allowed for this notice will permit, we again recur to the great value of the work to the practitioner and student, as a store of sound medical information. The volumes are bound in muslin, for which the publishers apologize, but they have given increased care in having it well done.

Transactions of the Medical Society of the State of Pennsylvania, at the fifteenth annual session, held in Philadelphia, June, 1864. Third series, part III., published by the Society. Philadelphia, 1864, pp. 227.

The meeting from which this volume issued met in Philadelphia, in the new hall of the College of Physicians, in June last, under the presidency of Dr. Wilson Jewell, of Philadelphia, whose opening address occupies the first portion of the volume, after the minutes. Dr. Jewell's theme refers chiefly to the early medical institutions of the city of Philadelphia,

more especially to the College of Physicians, into the early history of which he enters with considerable detail, giving sketches of several of the founders, Drs. Redman, Jones and Hutchinson.

The address concludes by an appropriate and feeling reference to the decease of Drs. Bache and Thomas, whose standing in the Society elicited, and deserved fully the excellent remarks of Dr. Jewell.

The great body of the book consists of the reports of the numerous country Medical Societies, of which that from the Philadelphia County Society is the longest. This report contains obituary notices of Dr. W. H. Gillingham, Dr. A. Bourronville, Dr. J. B. Haskell, and Dr. J. McG. Pugh. The volume is, we believe, brought out under the editorial superintendence of the Permanent Secretary, Dr. Wm. B. Atkinson, and is well printed on good paper.

A Comprehensive Medical Dictionary; containing the pronunciation, etymology and signification of the terms made use of in Medicine and the kindred sciences, with an appendix comprising a complete list of all the more important articles of the Materia Medica, arranged according to their medicinal properties. Also an explanation of the Latin terms and phrases occurring in Anatomy, Pharmacy, etc., together with the necessary directions for writing Latin prescriptions, etc., etc. By J. THOMAS, M. D., author of the system of pronunciation in Lippincott's Pronouncing Gazetteer of the World. Philadelphia, J. B. Lippincott & Co., 1864, pp. 704, duodecimo.

A hasty glance at this volume induces us to postpone a notice of it to our January number, that its merits, which appear to be many, may be more fully examined. So far as looked into, it appears to offer much that will prove highly useful to medical and pharmaceutical students, and especially to medical writers and lecturers, to whom the etymological and pronuncial features of the work will be especially acceptable.

Braithwaite's Retrospect of Practical Medicine and Surgery. Part XLIX., July. New York: W. A. Townsend. Pp. 300 octavo.

We owe an apology to the publishers for omitting to notice the reception of Braithwaite in our September issue. Among the papers it contains interesting to pharmaceutists are the following:—

On the preparation of opium and its alkaloids salts, by Dr. A. B. Garrod.
On Lettuce and Lactucarium, by Dr. A. B. Garrod.

The cheapest disinfectant, by Robert Druitt, Esq., of London.
On Bromide of Potassium, by Dr. A. B. Garrod.

On chloroform and its safe administration, by Dr. Charles Kidd.

And on acid and sugar in spirituous liquors, by Dr. H. Bence Jones.

Our medical readers will be gratified by many valuable papers on surgery and midwifery, upon which subjects this number more particularly treats.

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